The Iron

A Review of the Hardware, Iron and Metal Trades.

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Porter-Allen Steam Engine Applied to Rolling Mills.

Something like a dozen years ago, the mechanical world was fairly taken by surprise by an engine exhibit made at the thirty-ninth exhibition of the American Institute, in New York City. It was of a stationary engine which was novel in almost every respect. Whether we looked at it from the cyliner or crank end, considered the bed-plate or speed, something was found which to the mechanics of the day could be called little mechanics of the day could be called little in the agents and was a stationary work of the foundry or machines shop, and what would become of the stationary work of the foundry or machines. The workmanship was a standard of the better class.

them, they were actually weighted, in order that they might absorb the power usually expended in punishing the crank-pin. We was needed. Scientific men appreciated its value and the practical character of the ingenious devices by which its high speed was maintained, at no greated with the greatest possible of the day could be called little in the actuary work of the foundry or machines.

The definition of the dozen that, unknowingly, design-appreciated its value and the practical character of the ingenious devices by which its high speed was maintained, at no greated with the speed was maintained, at no greated with the speed was maintained, at no greated the works of well remember the disparaging admiration while to the derivation of the American Institute, in New York City. It was of a stationary engine which the American Institute, in New York City. It was of a stationary engine which the origine which the contraction. It is curious to find that, unknowingly, design-acter of the inspensions devices by which its high speed was maintained, at no greater by a ferrick & Sons, where, years ago, some of the most successful of the older engines, and to find that, unknowingly, design-acter of the inspension of the device of the inspension of the Marken by surprise which theory calls for, and it is really neces

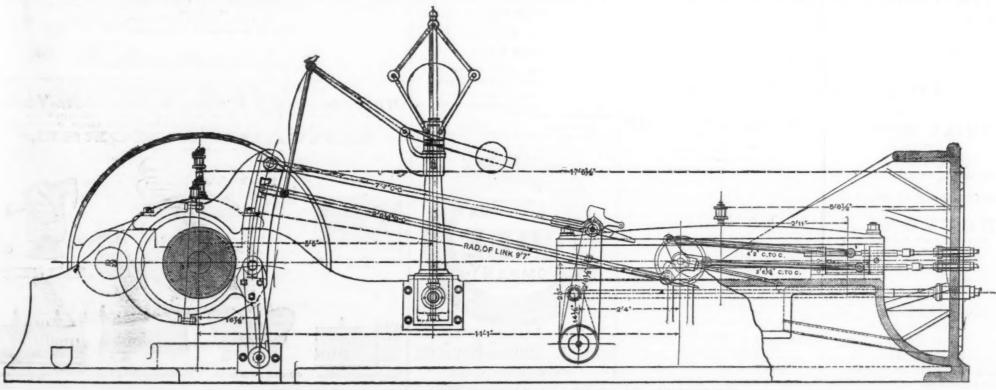


Fig. 1.—Side Elevation of Engine for Rolling Mill; Cylinder, 44 × 48 Inches.—Scale, ½ Inch to the Foot.

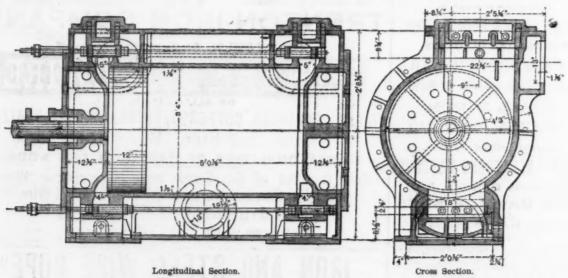


Fig. 2.—Vertical Sections through the Cylinder.—Scale, 1/2 Inch to the Foot

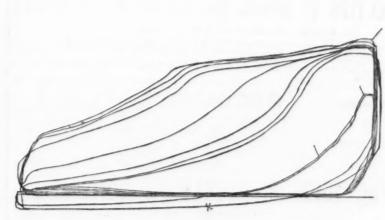


Fig. 4.-Card from 40 × 48 Porter-Allen Engine at the Otis Iron and Steel Works, Cleveland, O.; 90 Revolutions per Minute.

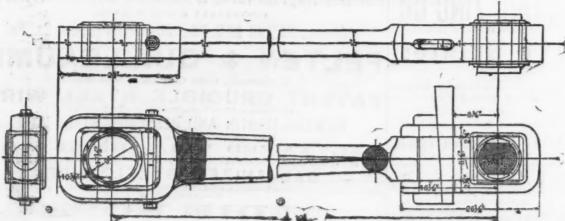


Fig. 3.—Details of Connecting Rod.—Scale, ¾ Inch to the Foot.

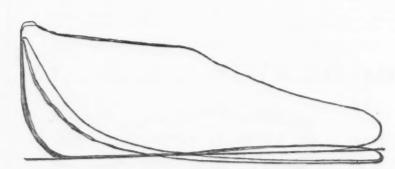


Fig. 5.—Card from the Engine at 85 Revolutions per Minute.

THE PORTER-ALLEN ENGINE.

of a character the like of which had rarely been seen in the best shops, probably never been put upon an engine. Bonnets dited their seats metal to metal, without packing. Cylinder heads in like manner, without grinding, went into their places team-tight, without packing of any kind. Soraped surfaces were used wherever they could be employed to advantage. The pine were steel-hardened, or at least had steel surfaces, and were ground. More than all this, the speed of the engine was terrific. In this, the speed of the engine was terrific. In this, the speed of the engine was terrific. In this, the speed of the engine on exhibition made a speed of something like goo feet. Per minute, and instead of being furnished with parts as light as it was possible to make

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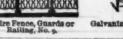














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BLAKE'S Challenge Rock Breakers. Patented Nov. 18, 1879. See The Iron Age first issue of the

Steel Castings.

The presence of air bubbles, so often met with iningots and steel castings, have always been a source of considerable trouble and annoyance, and have, consequently, led to repeated experiments aiming at their re-moval. Several methods, such as the Whitworth and Terrenoire methods, have met with a partial success, and, as compared with these, it is stated that the invention of Mr. E. A. Krupp, of Essen, possesses peculiar advantages, justifying a short description of

Mr. Krupp proposes to subject the liquid metal, when in the mold, to a considerable pressure, produced by a liquid or solid substance of such a nature as to be in the gaseous state under ordinary atmospheric pressure and temperature. Immediately after the metal has been poured into the mold, communication is established between it and a vessel containing any such substance, carbonic acid, for example, and according to the temperature to which the reservoir is exposed, and according to the properties of the substance employed, a gas pressure of any required strength may be applied to the molten metal. As the applied pressure must be regulated within limits decided upon as desired, the above-mentioned reservoir is placed in a bath of water, oil or other suitable fluid, which, by the admission of steam or water thereto, can be heated or cooled as required. The pressures, of course, depend upon the extent to which the reservoir is upon the extent to which the reservoir is filled, and upon the temperatures to which the substance is exposed, and, in order to enable the pressures to be most advantageously applied, the upper part of the molten metal is kept hot as long as possible, while the ingot is gradually cooling and contracting, the upper part of the mold being provided with an interior lining of refractory material. with an interior lining of refractory material.

Another method consists in covering the surface of the molten metal with a layer of liquid slag. The same object may be effected by making use of a thick cover of some practically non-conducting material. This cover is placed on the top of the metal, and the pressure is maintained until there is no further tendency to form hollows or pores in the ingot or casting.

It has been in some cases proposed to use linings of refractory material, which, practically, surround the molten metal in the mold, but the action of such material at the lower part would be disadvantageous and defeat the object of this invention, which is to provide for the pressure being applied properly; and, to enable this to be done, the molten and, to enable this to be done, the molten metal is kept as hot as possible at the upper part while the lower part is gradually cooled. It may be interesting, in this connection, to note the method proposed by Dr. Henrik Tholander, of the Forsbacka IronWorks, Sweden, the molten Bessemer metal, in this case, being exposed to a vacuum, or rather the principles. to a minimum of atmospheric pressure, by which the gases contained in the metal are removed. The vacuum is to be produced in removed. The vacuum is to be produced in the converter itself, and for this purpose an ejector worked by a fan or jet of steam is placed in the open end. The latter may also be closed by a cover, and afterward connected with a suction fan of suitable construction. The gases which have been absorbed by the metal escape with considerable violence, and though for many reasons an article absolutely free from gases cannot be produced by means of a converter vacuum, the tension of the remaining gases is neverthe tension of the remaining gases is never-theless so much reduced that they can no longer separate, but remain fully dissolved in the metal, forming no bubbles or air holes. Another advantage claimed for the vacuum process is that the red-shortness of the Bes-semer metal, as far as this is occasioned by semer metal, as far as this is occasioned by the presence of oxidized iron in the metal, is diminished, because the exidized iron dis-solves itself on account of the high tempera-ture in the converter into metallic iron and oxygen, which latter evaporates in one or

another gas formation.

Another suitable method of carrying out this invention is thus described in the London Mining Journal: The converting chamber is fitted with an ejector, and has on its upper part a disk or collar of cast iron, into which, by means of a luting consisting of fine ground quartz or "chamotte flour" (powdered brick) and clay, and by means of screw bolts, an iron ring is pressed air-tight; this ring is fastened to a sheet-iron helmet or cap, which is lined with fire-proof material. Through said dish or collar, fitting as closely as possible, the leading or guiding rod runs to a branch from a chambered interior rod, and is made hollow in order to serve as blowing pipe in the ejector, the delivery mouth-piece of which is placed in the hemlet or cap covering the converting chamber precisely in the middle above the leading rod or blowing pipe, and an air pressure or steam pipe is connected to this when evecuation is to take another gas formation. pipe, and an air pressure or steam pipe is connected to this when evacuation is to take place. The leading or guiding rod may of course also be made solid, as is the usual way, and the ejector be attached quite apart from it to the converting chamber or its cover. If a converting chamber is not used the ejector ought to be fixed with a suitable the ejector ought to be fixed with a satisfication litting direct to the opening of the converter. Two more outlet mouth-pieces may be used where a strong current must be maintained, rather than to increase the delivery opening of a single ejector in a corresponding degree. On allowing the metal to issue from the converter, even if free from gases before tapping takes place, bubbles may be produced, owing to the air which is drawn into the molds by the stream of metal, this being molds by the stream of metal, this being especially the case when the fall in the open air is very high, and when the metal issues very rapidly from the tap hole. This air oxidizes the iron, and the iron thus oxidized mixing with iron turns into carbonic acid, which certainly may evaporate while the metal remains liquid in the mold, but which otherwise, at least to a certain extent, remains together in bubbles in the blooms. In order to avoid this inconvenience it is In divisable to adopt the methods used in many In order to avoid this inconvenience it is advisable to adopt the methods used in many places in regard to Bessemer metal, viz., to place a funnel or a basin over each mold, close beneath the converting chamber, in which the metal is first poured, and from which it runs down into the mold with decreased speed. This basin should so completely cover the opening of the mold that just sufficient space remains te allew the in-

The Production of Sound Ingots and closed gases to escape. In this way air is entirely excluded, only such gases being carried along to which Bessemer metal is indifferent, and which when they are in the mold are not absorbed, but immediately rise to the surface.

The Temperature of Tunnels.

Observations in shafts, mines and borings show that at a certain depth below the surface the temperature is constant all the year round. The exact law as to the increase of temperature beyond this depth is not known, to the first terms to be the state of the st warm water, decomposition of gravel and feldspar, slow combustion of coal, &c., may, naturally, involve changes in certain places. Thus, in the celebrated Comstock Mines, Thus, in the celebrated Comstock Mines, Nevada, a temperature of 40 to 50°C. prevails at a depth of from 2000 to 2600 feet. The depth reached by mines is, however, by no means so great as the hight of the mountains superincumbent upon the tunnels which pass under the Alps, or are to be made through them, and it is consequently fortunate that the above increase of temperature is not exercise of in tunnels, but ature is not experienced in tunnels, but stands in relation to observations in plains or on mountains of medium hight. The Mount Cenis Tunnel, for example, is about 4428 feet above the sea level at the middle, and the highest part of the mountain chain below which it runs is some 5243 feet higher. The prevailing temperature there is for the air — 6° C.; for the mountains — 1° C.; the temperature observed in the tunnel should be found to see the second section of the second section of the second section is the second section of the second section in the second section is second section. the temperature observed in the tunnel shortly after its completion was $20\frac{1}{3}^{\circ}$ C., making a difference from the summit to the tunnel center of $30\frac{1}{3}^{\circ}$ C. Thus, the increase of temperature would be 1° C. to about 170 feet of depth under the mountain chain. With regard to the St. Gothard Tunnel, it may be said that the outer temperature is felt for a distance of only 6000 or 9000 feet, the temperature at greater distances dependent the temperature at greater distances depending upon the mass of the overlying rock. In the middle of the tunnel, some 3785 feet above the level of the sea, the temperature is 30½° C., and on the summit of the mountain, about 5500 feet higher, it is — 1° C. M. Dubois-Reymond, who assisted in making observations in the St. Gothard Tunnel, came to the conclusion that work may be carried on just as easily in a dry atmosphere of 50° C. as in a moist atmosphere of 40° C.; those two figures forming the limits within which man is able to work for any length of

Suggestions for Improvement in Elevated Railways.

Now that New York has solved, and, in a measure, successfully solved the problem of elevated railways, various so-called improvements are proposed, the latest being by somebody in Chicago, who promises to overcome all objections to which the present form of road is open, by dispensing with the locomotive, each car deriving its motive power from gravitation. The proposed road is thus described by an exchange:

"The elevated track is laid with an incline, down which run neat little cars, each of which seats fourteen passengers; the car moves along with a uniform accelerated motion until it reaches the bottom of the incline, where passengers get on or off; then

cline, where passengers get on or off; then an elevator, similar to the freight and passenger elevators so much in vogue in large buildings, raises it to the top of the next in-cline, down which it runs. The trestle-work will be less in the way and less ponderous than that necessary for elevated railways where locomotives and whole trains of cars

where locomotives and whole trains of cars are run, similar to those now in use in New York City. The cars, when loaded, will not weigh more than 3000 pounds, while a locomotive alone weighs many tons."

This sounds very well, but the inventor, evidently, did not consider that the essential requirement for a successful application of this system is a comparatively level street, or rather a street without sudden and considerable variations of grade. It is true that this would be of little consequence if the the people would soon cease to avail them-selves of the doubtful benefits of the system.

Some interesting notes have been published concerning the hydraulic works for the use of the Industrial Exposition at Milan, and of the new fountain erected in that city. The total cost of the works was \$16,000. The daily supply of the fountain costs \$1.80, and the water is thrown to a hight of some 87 feet, involving an expenditure of about 9 gallons of water per second. The effect is quite as striking as that of either of the other great fountains of Europe. The Berna fountain consumes about 18 gallons per second; the Trafalgar Square, 16; the Stoccarda, 15½; the Turin, 12½; each of the foutains of the Place de la Concorde, 15½; each of the Rond Point, 9; that of the Place Belle Court, 10, and that in the Place du Chateau, Brussels, 10. Some interesting notes have been published

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(Continued from page 1).

motion of the valves is rapid, while their idle travel is greatly reduced by the employment of the wrist motion first applied to slide valves by Mr. Corliss. The exhaust valves have a positive motion, and give a full opening when the piston reaches the termination of the stroke. This opening is maintained till near the close of the return stroke, when the port is closed by a rapid motion.

Figs. 2 and 3 show a longitudinal section of the cylinder, and also a cross-section through the valve chests. Each valve is shown in the position which it occupies when the piston is at the forward end of the stroke. The exhaust valve at the upper side on the right is shown, giving a full opening to the steam. The steam valve in the opposite corner is just opening. These valves are both of them rectangular blocks of metal working in rectangular openings, and each opening has four passages for the admission or release of the steam. They are balanced at all points of their stroke, since the pressure of steam, and even the pressure of the flow steam, and even the pressure of the flow of steam, comes upon them in all direc-tions, and is consequently equalized. The method of keeping the steam valve tight is most beautifully worked out, and operates perfectly, not only at all temperatures, but for any amount of wear that can come upon the valve. Actually, the only wear that is possible is that due to the insignificant weight of the valve upon its lower edge. weight of the valve upon its lower edge, which is so small as to be practically of no importance. The "pressure plate," as it is called, forms one side of the opening in which the valve works, and while touching it, rests on inclined seats shown in cross-section. Fig. 2, relieving the valve of all pressure. it is moved up or down by turning the bolt on which it is supported. When it is moved up it is forced away from the valves; when it is moved dup it is forced away from the valves; when it is moved down the steam pressure closes it against the valve. The exhaust valve is very peculiar in its arrangement, and is so filled at the back by its outside casings that, though the pressure upon it is outward, there is no waste room save a small portion of that actually needed for the movement of the valve. This is a result, we think, not before obtained with a plain sliding valve. The steam ports are 18 inches long by 4 inches wide, while the exhaust ports are 5 inches in width and 22½ inches long. The latter are so placed that they completely drain the cylinder. Both cylinder covers are chambered out. The stroke is 48 inches, and the diameters of the cylinder. The learth beautiful the contraction of the cylinder. Both cylinder covers are chambered out. The stroke is 48 inches, and the diameter of the cylinder 44. The length between the cylinder heads is 5 feet and ½-inch, while the length over all is 7 feet 5½ inches. The walls are 1½ inches in thickness, and the heads from inside to out about 16 inches. Fig. 4 shows the connecting rod in detail. It is exceedingly heavy, being 9½ inches deep at the crank-pin end, and 5 at the cross-head. The form is, we think, identical with that first used. The crank-pin end having no straps, but being slotted out to take the brasses, which are adjusted by a wedge held by a couple of screws. The cross-head end has the usual gib and key. The pin, which is flattened, is 7½ x 6 The cross-head end has the usual gib and key. The pin, which is flattened, is 7½ x 6 inches. The main pin is 9 inches in diameter by 8 inches long. To save overhang as much as possible, the rod is given the least possible clearance with the disk, and the brass is overhung, if the term may be used, to the extent of an inch, which reduces the expense of the pin to the same extent. Its overhang of the pin to the same extent. Its length over all is 13 feet 6 inches. It is 12 feet, or three times the length of the stroke, between centers. The slotted form of the end caused much comment when it first ap-

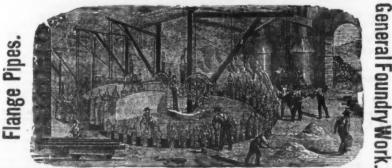
between centers. The slotted form of the end caused much comment when it first appeared, but long use has demonstrated that it is very desirable, and the same plan has been repeatedly adopted by engineers when practicable.

The accompanying indicator cards were taken from a 40 by 48 Porter-Allen engine at the Otis Iron and Steel Co., Cleveland, Ohio, by Mr. S. T. Wellman, in October and November, of last year. The scale is 40 for both cards. The first of these, Fig. 4, was taken with the gauge at 77 pounds and the engine making 90 revolutions per minute. The cut-off line marked x is worthy of notice, as the valves practically cut off the steam instantly, without allowing the initial pressure to rise more than a pound or two above that due to compression. The expansion curve, of course, falls far below the atmospheric line. A curious fact may be noted here. The pressure, of course, rises as the exhaust valves open, but instead of no back pressure, as in the cards when the steam follows for a considerable distance, there is a strong back pressure for some little distance. strong back pressure for some little distance. This results from the necessity of reversing the current of steam in the exhaust pipe. When the valve opens, the steam rushes toward and into the cylinder, instead of away from it, and this causes the back pressure line to rise, and it remains some distance line to rise, and it remains some distance above the atmospheric line till near the close of the return stroke. This is more plashly shown in the second card, Fig. 5, when the normal back pressure is almost nothing. In the second card the steam pressure was 70 pounds and the speed of the engine 85 per minute. The cut-off is very perfectly controlled by the governor, a fact that is shown not only by the wide variations in the point of cutting off, but also by the fact that, when the work is sensibly uniform, the cutting off is also uniform, and the cards at successive revolutions are identical. The point of cutting off waries from tical. The point of cutting off varies from nothing to about three-eighths of the stroke, the speed being so uniform that its changes are not perceptible-except, perhaps, to an expert.

An apparatus for the determination of melting points has been described by Mr. C. F. Cross and Mr. E. J. Bevan. It consists of a small platform of thin ferrotype iron or silver, having an opening for the reception of a thermometer bulb, and a small indentaof a thermometer buth, and a small indenta-tion or depression. A very small quantity of the substance is melted in the little depres-sion, and, while still liquid, a thin platinum wire, bent like an L and fused in a glass float, is immersed in the liquid and held there until the substance solidifies. A thermometer is then inserted in the opening and the whole apparatus plunged under mercury, which is apparatus plunged under mercury, which is gently heated, and the thermometer mean-while is carefully watched. When the sub-stance melts the float rises instantly, and the temperature is noted.

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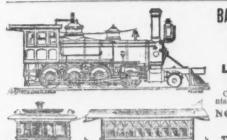
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The Bronze Age of Britain.

The above was the subject of a lecture recently delivered in Birmingham, England, by Dr. John Evans, the period referred to being that when iron and steel were practically unknown in England, and when cutting tools, weapons, &c., were made of bronze. It was stated that the existence of such a period did not rest merely upon the feet that a large number of bronze implefact that a large number of bronze implements were often found unassociated with ments were often found unassociated with iron articles, though occasionally with some of flint, but it was also to be found in the pages of early history. The existence of a bronze age to a certain extent implied that in some part of the world there existed a copper age, and the nearest approach to a copper age prevailed in Wisconsin and other parts of North America, where native copper was found in large quantities. In those districts a considerable number of the early implements were hammered out of the those districts a considerable number of the early implements were hammered out of the copper. The discovery of bronze was made in America as well as in the old country, bronze being a mixture of tin with copper, and used for the purpose of producing implements which should be superior in quality to copper implements, and also more readily produced. In Peru bronze implements were found, made as nearly as possible of the same proportions of tin and copper as those manufactured in Europe, the favorite proportion being about nine of copper to one of tin. The proportions, however, varied, partly, no doubt, owing to the temporary want of one or other of the metals, and partly with a view of producing a harder metal for certain purposes. Although bronze, as a rule, contained no lead or zinc, the former metal was found in small proportions in several articles coming from Scotland and Ireland. Profiting by past experiences, the people soon learned that lead in small quantities might be successfully used for articles not intended for cutting purposes, being, moreover, much cheaper than tin. In some cases, especially:

| Pack's | Compact red hema. 64.34 | 0.435 | 0.435 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.445 | 0.4 coming from Scotland and Ireland. Profiting by past experiences, the people soon learned that lead in small quantities might be successfully used for articles not intended for cutting purposes, being, moreover, much cheaper than tin. In some cases, especially in the northwest of France, as great a proportion as 33 per cent. of lead was sometimes used in bronze, and some discoveries had been made wherein it was found that implements supposed to be bronze had been made wherein it was found that implements supposed to be bronze had been made wholly of lead. There is some difficulty in regard to the date to be assigned to the bronze age. Iron swords were in use in Gaul not later than the fourth or fifth centuries before Christ, and therefore they were most probably known in Britain. Judging by the different shapes of bronze implements which have been found from time to time, the bronze period seems to have been, with by the different shapes of bronze implements which have been found from time to time, the bronze period seems to have been, without doubt, of no inconsiderable duration, having commenced probably about 1200 B. C., and continued as far as 400 B. C.

The Mineral Wealth of Virginia.

A recent issue of the Bulletin of the Ameri-A recent issue of the Bulletin of the American Iron and Steel Association contained highly interesting and valuable tables of the details of the production of pig iron in the United States during the years 1870, 1880 and 1881. An examination revealed the fact that the increase in production in Virginia during 1880 over 1879 amounted to about 60 per cent., and the gain in 1881 over 1880 was about 180 per cent. This was by far the greatest percentage of increase shown by any State in the Union. The condition of the blast furnaces on the 31st of December, 1880 and 1881, may be estimated from the following figures, giving the number of stacks in blast and out of blast:

In blast. Out of blast. Total.

In blast, Out of blast, Total.

.. 13 The following items relating to Virginia's enterprise and activity will also be of in-

Furnaces building in | Furnaces abandoned

Judging by the zeal now exhibited in opening mines and constructing furnaces, it seems certain that the increase of production shown during the past year will continue for a number of years yet to come. The New River Branch of the Norfolk and Western Railroad Company will provide iron producers with an abundant supply of coke of the best quality, and the outlook is encouraging in every respect. The following analyses of bituminous coal from the Flat Top Region, along the line of the New River Road, were made by Messrs. Booth, Garrett & Blair, of Philadelphia. The samples were taken from outcrops. The Nelson vein, now being opened by the Southwest Virginia Improvement Company, is 12 feet in thickness, of clear coal:

	Crockett's coal, Per	Nelson's opening. 11-ft.veir Percentag	Coal Cree outercp. 3%-ft. vr Percentag
Moisture	0.954	1.255	0.850
Volatile matter	26.130	20.175	20.630
Fixed carbon	70.883	77.675	72.750
Ash	2.033	0.895	5.770
Coke	72.910	78.570	78.520
Sulphur Ashin 100 parts coke	2.788		*********

Analyses of bituminous coal from the same ocality were made in Pittsburgh, the num-The samples were taken from shallow openings; No. X, the constituents of which are also given, is the average standard of Pennsylvania coking coal. It is stated that the amount of sulphur is probably higher in the Crane Creek samples than it will be when the mines are driven further in the mines are driven further in

	No. 4.	No. 9.	No. 8.	No. z.	No. 3.	No. X
Carbon Water & vol.		75.600	78.600	78.000	76,600	64.750
matter	18.200	20.200	18,200	18.500	18,200	27.560
Sulphur	1.401	1.196	1.455	1.552	1.455	1.380
Ash	2.800	3,600	2.400	2.700	2:400	0.310

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Another set of analyses were made of the same ores, Nos. 1 to 7 being the results obtained by Messrs. Booth, Garrett & Blair, and No. 3 giving the results of the analysis made by Professor Genth, of the University of Pennsylvania.

	Percenta
1. Pack's Compact red hema. 64.34 2. Chapman's Compact red hema. 64.95 3. Saidon's Slightly magnetic. 68.40 4. Buckeye	.028 .030 .017 .045 .028 .4:6

for the necessary underground work, while hundreds of tons of debris, which could be easi-ly ground up and made into good bricks, are ly ground up and made into good bricks, are left on the surface, occupying ground that could be made valuable. The material brought out of most mines has some properties that could be profitably utilized, even the crystalline slates and schists of the Devonian system, so rich in minerals. At some places the refuse is now ground up into fine cement, suitable for almost any purpose. Were every mine of any size to have a brick making and grinding machine the advantage would soon be apparent in a considerable saving in working cost. The oblitic rocks, in particular, in connection with which such vast quantities of ironstone are now raised, have also

working cost. The oflitic rocks, in partiaular, in connection with which such vast quantities of ironstone are now raised, have also material connected with them that would pay for selecting. In the lower oflites of some counties of England, cornbresh marble, Bradford clay, slate, &c., are found, and in the upper oflites there is not only the finer Portland stone now being extensively worked, but another valuable product called Kimmeridge clay. The area of ground over which this deposit extends is not defined, but as it appears to be a true member of the upper offite it should cover a large area. The clay is an argillaceous deposit, and in many places has been found several hundreds of feet thick, and with many typical fossils. It is a sort of a bituminous shale, and contains in a high degree the properties of coal, giving the same products such as gas tar, from which paraffine and so many other things are obtainable, as well as a large quantity of illuminating gas. Indeed, from a ton of it upward of 9000 feet of tolerably good gas have been obtained. From what has been said it will be evident that a great deal of what is looked upon as waste, and occupies valuable ground at mines, can be turned to profit at no great expense.

Expansion of Hard Caoutchouc.—
Grarrett & Blair, of Philadelples were taken from outson vein, now being opened test Virginia Improvement feet in thickness, of clear

Expansion of Hard Caoutchouc.—
Ordinary vulcanized caoutchouc should contain about 1-10th to 1-6th of sulphur, a greater proportion yielding a hard, horn-like product, which expands considerably when heated. It was established by Mr. Kohlrausch, some years ago, that this hard caoutchouc, while expanding equally with mercury up to the freezing point, expands much more at higher temperatures, so that in a thermometer consisting of a vessel of much more at higher temperatures, so that in a thermometer consisting of a vessel of this material filled with mercury, the latter would appear to contract with an increase of temperature. Results of experiments made by Mr. R. Fuess, of Berlin, appear to confirm Professor Kohlrausch's statement. Mr. Fuess placed a rod of caoutchoue 1-5th inch thick in a glass tube 3-5th inch diameter, and filled the tube with mercury to a height of 3 feet, exactly up to a little pin of platinum projecting horizontally from the Analyses of bituminous coal from the same locality were made in Pittsburgh, the numbers in the table below corresponding with those of the beds in the Crane Creek section. The samples were taken from shallow openings; No. X, the constituents of which are also given, is the average standard of Pennsylvania coking coal. It is stated that the

The following story has been started on the round. We will help it along: A few days ago, while the fly-wheel of the Winchester Arms Manufactory, in New Haven, Conn. was revolving so rapidly that the spokes were indistinguishable, the engineer noticed a white blotch revolving with it, but supposing that it was merely sunlight falling on the wheel, he affirst made no investigation. Sulphur ... 1.405 1.455 1.552 1.455 1.455 1.552 1.455 1.455 1.552 1.455 1.455 1.552 1.455 1.455 1.552 1.455 1.455 1.552 1.455 Two hours and a half later he observed that

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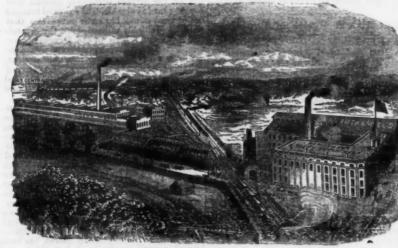
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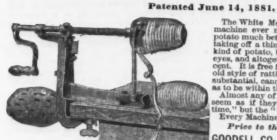
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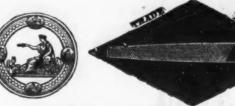
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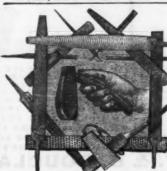
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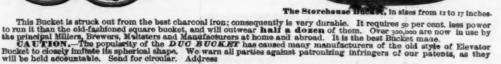
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The World's Wheat Crop.

The prospects of the next harvest are likely to be canvassed with more than usual interest, for although the total European wheat crop of last year was perhaps about an average one, yet so large was the deficit in the American exportable surplus, that the next cereal year must inevitably open with next cereal year must inevitably open with light, perhaps exceptionally light, stocks carried over. There are, therefore, special reasons for hoping that the wheat crop of 1882 may prove an abundant one. Up to this time the conditions affecting the growing crop of winter wheat have been very favorable, both in this country and in Europe, and the weather has also been very promitious for seeding the spring crop: but propitious for seeding the spring crop; but this early gain is so subject to being neu-tralized by subsequent conditions that noth-ing can be safely inferred from it. It is of im-portance, however, to a correct interpretation of the maturer prospects to appear at a later stage, that certain facts affecting the world's crop and consumption at large should be better understood than they now appear

In making estimates of supply and demand for these times, there is great danger of attaching too much importance to the data of bygone years. Within recent times the grain trade has undergone great changes, and transition seems to be still in progress. There has been a steady and large increase, both in production and consumption, of the cereals adapted for human food, not merely in this, but also in foreign countries. In most European countries there has been, within the last quarter of a century, a large augmentation of the area under cultivation, and, at the same time, an important increase of the yield per acre. Even Great Britain, of the yield per acre. Even Great Britain, during the last decade, reclaimed 1,687,000 acres of waste land; without, however, increasing her cereal crops, for an equal extent of land has been diverted from arable to pastoral purposes. France has enlarged her acreage under wheat by 16 per cent. since 1865, and she is gradually increasing the rate of yield through the adoption of improved methods of culture. There is, however, still great room for progress in French agriculture, the present yield of wheat being only about 16 bushels per acre. If France could be induced to cultivate her land up to the English standard of yield, she would could be induced to cultivate her land up to the English standard of yield, she would have not only sufficient wheat to supply her home wants, but also 225,000,000 bushels for export. This enormous capacity for increase in one country now dependent on us for sup-ply is a fact that we cannot afford to over-look. Prussia also has made a vast addition to have expeal products, her cross being, in look. Prussia also has made a vast addition to her cereal products, her crops being, in 1841, 102,000,000 bushels, and in 1879, 465,-000,000 bushels, or an advance from 6½ bushels per head of population to 18 bushels per head. In Russia the emancipation of the serfs has produced a wonderful addition to the world's supply of grain, the exports of the empire having risen from 910,000 tons in 1866 to 6,150,000 tons in 1878. In Austria-Hungary improved methods of farming have Hungary improved methods of farming have raised the average yield of grain from 12 bushels per acre in 1840 to 15 bushels in 1876. Beyond the increase of production in Europe indicated by these facts, we have to reckon also the vast new supplies coming from Australasia, India, Africa and North and South America.

The foregoing facts indicate the enormous increase of production that has been found necessary, within the second half of this century, to satisfy the augmented consumption that has sprung from the greater properity of the masses under the era of steam civilization. With an expansion so vast and

civilization. With an expansion so vast and so rapid in this branch of industry, it is clear that the data of past years afford imperfect criteria for the present, and statistics must therefore be used with due allowance for the increased consumptive requirements of each succeeding year. It is important not only to allow for this increasing ratio of consump-tion per capita, but also to keep in view those countries which are decreasing or re-maining stationary in production; for such failures, to keep pace with the growth of demand, make room for a correspondingly greater product in the countries having a larger productive capacity. It is the more important that this factor be carefully weighed, because the countries whose crops are thus falling behind the ratio of consumption are by no means unimportant. For instance: England's deficiency from this cause has risen from an annual average of 58,000,000 bushels, for the 20 years ending 1870, to 111,000,000 bushels yearly for the 10 years ending 1879; while France, in spite of her large expansion of crops, has increased her net imports of grain from \$2,000,000 in 1840 to an average of \$41,000,000 for the 10 years ending with 1877; and Holland, Spain, Switzerland, Belgium and Italy barely keep pace with the increase of population, much

oss with that of consumption.
Under these circumstances, it is of im-Under these circumstances, it is of importance to ascertain the present status of each country in respect to production and consumption; and in presenting such a comparison, rather than rely upon our own computations, we prefer to give the estimates of a statistical authority that will command general respect. In his recent valuable work on "The World's Progress," Mr. Michael G. Mulhall, F. S. S., an eminent English statistician, estimates the wheat lands of the world at 105,000,000 acres, yielding 15 bushels per acre, and he states the crop, consumption, surplus and deficit of according to the ground, of the same dimensions as those in present use.

The American Consul, at Iquique, Peru, complains of the lack of direct communication with that port, either by sail or steam, but he says the consumption of American goods, imported by way of Valparaiso, is considerable, and is on the increase. Among others may be mentioned iron bedsteads, cooking stoves, plated ware, cotton goods, the crop, consumption, surplus and deficit of various kinds. The market is a good one, and with the increased exportation of nitrate the crop, consumption, surplus and deficit of each country as follows:

	Crop. Bushels.	Consumption. Bushels.	Surplus. Bushels.	Deficite Bushels
U. States	400,000,000	250,000,000	150,000,000	*******
France		260,000,000		30.000,000
Russia	160,000,000	80,000.000	80,000,000	******
Germany	150,000,000	170,000,000		30,000.000
Italy	140,000,000	145,000,000	******	5,000,000
Turkey Un King-	90,000,000	80,000,000	10,000,000	******
dom	90,000,000	200,000,000		110,000,000
Austria Spain and	90,000,000	76,000,000	14,000,000	******
Portugal	84,000,000	84,000,000		******
Canada	40,000,000	90,000,000	10,000,000	******
Australia	30,000.000	15,000,000	15,000,000	
Chill	15,000,000	10,000.000	5,000,000	
Othe.coun- tries	20,000,000	139,000,000		119,000,000
Total	1,540,080,000	1,540,000,000	284,000,000	284,000,000

to make some allowance for the circumstance that, at the period here chosen for compari son, the crops of Europe were exceptionally light, while that of the United States was ngnt, while that of the United States was exceptionally large; it may therefore be open to question whether the distribution here exhibited is an entirely normal one. The exceptional conditions alluded to gave to this country an ascendancy in the trade never before reached; and it is a problem which the future alone must determine how far that relative position can be maintained.

—N. Y. Commercial Bulletin.

Danger Signals on the Atlantic Coast.

Of late years the invention of the automatic signal buoy known to mariners as the "whistling buoy," has in a great measure diminished the danger of approaching our coast in thick weather. This ingenious and withal simple invention has, when in the water, nearly the same outward appearance as the ordinary iron nun buoy, though larger. It is composed of boiler iron, is in shape generally like a truncated cone, and carries on top an air-whistle similar to the ordinary steam-whistle of a locomotive or marine engine. The whistle is connected, by means of a small tube, with a hollow cylinder, also of iron, extending from twenty to thirty feet below the ordinary water level, or, in other words, so far below the surface as to reach a depth undisturbed by the largest waves. Two tubes, open at top and provided with ball valves at bottom, supply air to the buoy, the air rushing in as the buoy rises and being expelled through the whistle as it falls in the trough of the sea. The iron buoys (exclusive of the bell buoy and the whistler) are of two classes, can and nun buoys. Both are made of boiler iron, and are larger or smaller, according to the im-portance of the danger they are intended to mark or the amount of wave buffeting they may have to endure. The can buoy is a cyl-inder with flat top and rounded bottom; the nun is a truncated cone (that is, the point or apex of the cone is cut off and a flat top apex of the cone is cut off and a flat top substituted), and its bottom is rounded like that of the can. An eyebolt securely keyed into the bottom of the buoy connects it with the chain cable and anchor used for mooring it in position. The anchor is usually what is called a "mushroom," that is, a solid hemisphere of iron, slightly concave on its under side search or iron, such to greater registered. side, so as to give by suction greater resistance—much as we see boys lift bricks and stones by means of a disk of wetted leather. These means of a disk of wetted leather. These mushrooms, when once half buried in sand, can scarcely be lifted from their beds, requiring to be pulled sidewise before they can be detached from the bottom. Where these are not used heavy stones are shackled to the cable. Ordinary ship anchors cannot be used, as those of sufficient size would be too cumbrous to transport in numbers, and all would, by the projection of the fluke and stock, be likely to become fouled by the chain and tripped by the buoy in the first heavy sea. Stones and mushrooms, on the contrary, admitting of swivels being secured to their eye-bolts, cannot be fouled by the chain in any

German Tariff Revision —A marjority has been secured in the Bundesrath for the tobacco monopoly. A bill which will take precedence of the customs tariff has been submitted in the Bundesrath raising the duties of some descriptions of iron, hardduties of some descriptions of iron, hard-ware, rope, honey and store goods 3 to 20 per cent., but owing to depression among the millers in Germany the import duty on foreign corn is reduced to an extent corresponding with the export duty.

The engineer in charge of the work of rebuilding the St. Charles Bridge has fifty-six carloads of material on the ground, fifty-six carloads of material on the ground, and predicts that when the permanent new spans are finished, about two months hence, the bridge will be the best of its kind in the world. In general design these new spans will resemble the new west span, put up about two years ago by the Baltimore Bridge Company. In fact, the plans of the spans about to be put up only differ in the matter of floor beams, which are deeper and more massive than in the differ in the matter of floor beams, which are deeper and more massive than in the western span. All the parts are made of wrought iron, riveted together, and have been manufactured by the Keystone Bridge Company, from plans furnished by C. Shaler Smith. The two new spans will cost \$160,000 when put up. No alteration is to be made in the line of the approaches; they will maintain the peculiar curves, as at present. The approaches, which consist of an iron trestle, are now constructed with wroughttrestle, are now constructed with wrought-iron posts 32 feet apart, with a truss to maintain the weight between each pair of posts. All these trusses now in the ap-proaches are to be taken out, and replaced by posts, reaching to the ground, of the same dimensions as those in present use.

and with the increased exportation of nitrate to the States, there ought to be an increased exportation of American goods.

The papers in a suit for \$450,000 damages have been served by the United States Marshal on the City of Boston at the instance of Marcus P. Norton, trustee, and Chistopher C. Campbell, both of Massachussetts, and Benjamin Richardson, of the State of New York. The cause of the action is the alleged infringement of an invention for steam fire engine pumps owned by the complainants and patented by James Knibbs on April 27,

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Iron, Steel, Copper, Brass, Zinc and other metals punched to any size and thickness, for all uses.

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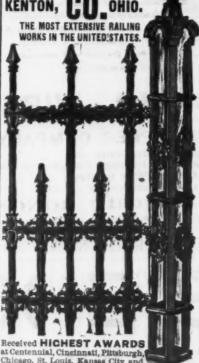
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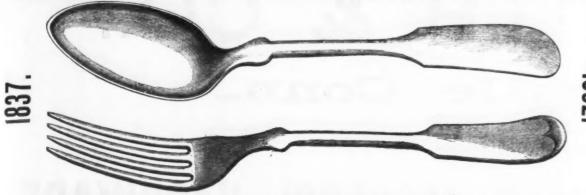
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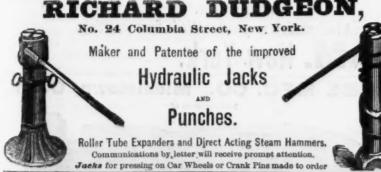
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Iron Making in South America.

ROGOTA, U. S. COLOMBIA, March 8, 1882. To the Editor of The Iron Age.—DEAR SIR:
On page 5 of The Iron Age of January 20th
last, I find a very much couleur de rose article
on "South American Iron Works," which is calculated to mislead any person who takes an interest in the matter. As I understand that the promoters of the enterprise are seeking capital in the United States to complete the works, it would be well to refer to the following extracts of a report made by Col. Thomas B. Nichols, formerly with Carnegie Brothers & Co., who was sent to examine and report upon the works for the says in his report:

says in his report:

In the plan and construction of the works at Samacâ, it appears that the fact has been entirely overlooked that the object of an enterprise of this kind is to make hon. A large sum of money has been employed in the erection of costly buildings of brick and cut stone, adorned with crosses and shields containing, in letters of gold, the names of the officials who have promoted the enterprise. The roofs, which are of iron, have been brought from the United States at great expense, while there are in the vicinity tile roofs that have served for 200 years. On account of the very damp climate, I doubt if the iron roofs will be of any service after three or four years. * The workingmen were employed in painting the brick buildings. * * A careful examination revealed the fact that many of the buildings are badly cracked, principally that intended for the blowing engine. This is due to the bad foundations. The stock-house, which is built of cut stone and brick, cost some \$5000.

One equally as useful could have been built for \$500.

The building intended for the rolling mill In the plan and construction of the works for \$500.

The building intended for the rolling mill

tom. An examination of the hearth and lining led me to believe that the material employed was not refractory. For trial, I selected two pieces of the stone hearth and some bricks from the lining and placed them in a small cupola with a quantity of coke. I found it extremely difficult to keep up steam and was compelled to suspend the blast at and was compelled to suspend the blast at the end of forty minutes. Opening the cupola I found the stone and brick melted into a confused mass. The representative of the Government not being satisfied with the test, I requested him to select samples for me. This being done, I repeated the trial, the results of which accompany this report, showing that the blast furnace in less than 24 hours could be melted almost like glass. Instead of arranging the hotblast stoves so that they might be heated by the furnace gases, they are arranged to be heated by coal, in fact it appears that every-

the turnice gases, they are arranged to be heated by coal, in fact it appears that everything has been built to use the greatest possible quantity of coal.

The draft chimney is but 65 feet high, and is entirely too low for this altitude (9000 feet above sea level) and is too small in cross section.

The method of extracting coal is absurd and expensive. Thirty-two men dig 24 tons per week. At this rate 240 men will be required to dig coal for the blast furnace alone. There is no system in the work. On one of my visits to the mines I found some of the

men asleep.

It is not pessible to say with certainty that there is abundance of iron ore. A careful examination showed that no extensive explorations have ever been made, the samples for analysis having been selected from the surface of the ground. A few hundred dol-lars might have been used to find out what is necessary before spending \$400,000, as has been done.

The following is an analysis made in Philadelphia, United States, of the ore on which the greatest faith is placed:

				pancou .		
Pure iro	D					28.0
Oxygen.						12.00
Water						15.00
Silica						37.0
						. 3
Alumina						6.00
						.00
Magnesi	B					.00
Oxide of	man	ganes	0			. 0
						- 31
The	quan	tity	of s	silica a	nd phosphor	us

The accounts at Samaca have been kept in

a very curious way. No one could tell what anything had cost. Some of the leaves have ASPESTOS MATERIALS, FIBRE, MILLBOARD, PACKING AND CEMENT.

been cut out of the ledger. The representative could not tell me the cost of a thousand bricks at the cost of a thousand bricks. a ton of any of the materials, what any par-ticular building or all the buildings cost, in fact none of the details necessary for the econmical management of such an enterprise However, by referring to old reports, I find ac counts showing that over \$400,000 has been spent in the work, that, in my judgment, could be done for \$125,000.

The enterprise from the first was projected on altogether too grand a scale for the necessities of the country. In one week all the cast iron that the country would use in a year could be made in a blast furnace of the

strength of the iron contained in car wheels and the degree of tensile strength required in large castings, such as had been used in the construction of the pumping engines at the Hiland avenue water works. Iron which would withstand a tensile strain of 28,000 pounds, Mr. Gill regarded as too dense for the purpose required, and more brittle and liable to fracture than iron of a tensile strength of 18,000 to 20,000. In reply to a question as to what where the strength of 18,000 to 20,000. In reply to a question as to what we had a strength of 18,000 to 20,000. In reply to a question as to what we had a strength of 18,000 to 20,000. In reply to a question as to what we had a strength of 18,000 to 20,000. pounds, Mr. Gill regarded as too dense for the purpose required, and more brittle and liable to fracture than iron of a tensile strength of 18,000 to 20,000. In reply to a question as to what quality of iron would be shown by 180 samples which average in tensile strength from 15,000 to 20,000 pounds to the square inch, Mr. Gill said that he would regard it as first-class in every respect. Mr. Wm. Sterritt, a founder of 32 years' experience, found fault with Mr. Lowry's method

of obtaining samples for testing by boring into castings. In his opinion the iron to be tested should be cast upon the portion of the machinery whose strength it was desired to ascertain. From the quality of the metal used in the engines, he was not inclined to think that it would withstand a tensile strain of 25 cor pounds to the accuracy inches

Lubricating Soaps for Wire Drawing and Similar Purposes.

BY W. J. MENZIES.

Soap for making "suds" for brass and Colombian Government. The works are being built by the Government of the State of Bayaca, and are located three days on muleback from this city. Colonel Nichols of this subject, therefore, from a chemical as are in his record. well as a practical point of view, will be of interest to many engineers and manufactur-ers. All kinds of hard and soft soaps are

The building intended for the rolling mill is entirely too small and not suitable for the purpose required. * * * *

The blast furnace is a costly affair of cut stone, calculated to produce about 10 tons of iron per day. Owing to the bad foundations the work is already settling, being cracked in two places from top to bottom. An examination of the hearth and that the material is the state of the solution will, when cold, set into a jelly seap. It will be evident to most practical mechanics that any liquid containing 95 per cent., or twenty times its weight, of water, cannot be of a very suitable nature for lubricating purposes, quite irrespective of other quires twenty times its weight of water to bricating purposes, quite irrespective of other considerations. For making "suds" for wire drawing or

For making "suds" for wire drawing or other similar purposes, the scap is used chiefly to keep the oil in suspension in a certain amount of water, added to prevent the oil heating when subjected to the extreme pressure of the wire-drawing operation. Less potash scap is required for this purpose than a soda scap, as, owing to its greater solubility, a given weight of potash scap will keep a much larger quantity of oil in suspension than the same weight of soda scap. It is very difficult to obtain a potash scap

It is very difficult to obtain a potash soap uitable for these lubricating purposes. The soft soap or potash soap of commerce is generally more or less adulterated, and never neutral—that is to say, always containing an excess of free or unsaponified potash. This is very objectionable, especially in the case of brass and copper wire. Zinc is readily attached and rendered soluble in a solution of caustic potash or caustic soda, and copper also is attached, though to a much less extent. The action of the free alkali, therefore, has a tendency to dissolve the wire in the act of drawing, and this is materially assisted by the company of the control of th the act of drawing, and this is materially assisted by the enormous pressure which it then undergoes, and interfering, to a certain extent, with the facility with which the wire can be drawn by forming a cloggy mixture. It may be suggested that the mixing of soap with an excess of oil, so as to form the suds, preserved by separations this records. removes, by saponification, this excess of caustic alkali, but it is by no means the case unless the oil is previously boiled with the soap without any large excess of water.

There are many adulterants added by manufacturers of soft soap, in order to cheapen the article and increase the profit, and they are of a very similar nature to those substances with which hard soap is now adulterated to such an enormous extent. now adulterated to such an enormous extent. Silicates of soda and potash—that is to say, compounds of sand and soda dissolved in water, forming thick, gummy liquids—are most objectionable adulterants when the soap is required for lubricating purposes. Yet these substances are now used to an enomous extent by manufacturers of both hard and soft soap. Many soaps contain thickening company. tent by manufacturers of both hard and soft soap. Many soaps contain thickening compounds to make them take up and hold more water, such as starch and potato-flour—doubtless useful articles for this purpose from a soapmaker's point of view, but not suitable for lubricating purposes. A certain amount of caustic soda is often used in the manufacture of soft soap, the result being really a mixture of potash soap and soda soap instead of a pure potash soap and soda soap, instead of a pure potash soap. The reason why this is done is that soda is far cheaper than potash, and also by its use more water can be got into the soft soap. As previously explained, however, this is very objectionable, as a potash soap is far superior to a soda soap for lubricating pur-

If a really first-class neutral soft soap cannot be obtained, wire-drawers and others requiring a pure potash soap for making their suds and other purposes, will generally find it both cheaper and better to make their own soft soap. This would have, been quite size contemplated.

Tensile Strength. — Some interesting testimony was lately adduced in the Lowry-Hartupee arbitration. Mr. J. L. Gill was examined at some length in regard to the strength of the iron contained in car wheels and the degree of tensile strength required in levels are strength of the strength required in levels are strength required.

find it both cheaper and better to make their own soft soap. This would have, been quite impossible a short time ago, as the production of potash soft soap was a tedious operation, requiring long boiling, special apparatus, and much time and practical knowledge. With the introduction of caustic potash, however, and the use of the "cold process," a pure potash soap can be simply made by a mixing the strength required.

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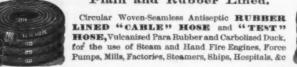
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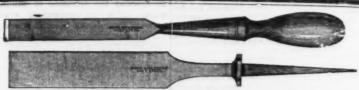
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Continue to stir until the oil and lye appear well combined and smooth in appearance. A few minutes will be all that is necessary. Put away the mixture in a warm place, cov-ering well up with blankets or woolen rugs to keep in the heat, caused by the mixture slowly combining and turning intersect. slowly combining and turning into soap. This wrapping up is very important, as the object is to keep the temperature uniform until the saponification is completed. The mixing may be done in a wooden vessel—half an oil barrel answers the purpose well. After three or four days the soap is formed, and may then be used, though it is generally better to stir up well again and leave it standing, still well covered up in a warm room? another three or four days. This insures the perfect saponification of all the oil, if any of it has separated from the lye after mixing in the first instance, which is sometimes the case. In this manner the finest possible

case. In this manner the finest possible soap for lubricating, and also for washing and cleansing purposes, can be produced. It is a real potash soap, made pure for use and in the most highly concentrated form obtainable and real interpretable to the clean of the concentration of the concentration of the clean of th tainable, and not simply made cheap for sale, with a large excess of water and impurities added. In passing it may be remarked that a scap thus made cannot be excelled for gen-eral washing purposes, especially flannels, and being neutral and containing no adulterants, washing all day with it will never give sore hands. This is a hint that some working mechanics may think it worth while to with reference to the best kinds of oil to

use. For wire drawing nothing excels a really first-class pale seal oil, and it also saponifies well. A really good, refined cotton-seed oil may be used for soft soap making, and it is a most excellent and cheap oil for making soft soap for general purposes, though very inferior to pale seal oil when added to the soap and water to make suds. As to the caustic potash, it is absolutely necessary that it be pure and undulted the state of the state of the state of the state. adulterated, as the whole principle of the cold process of making soap entirely depends on the use of a strong, pure lye of caustic potash; in fact, complete saponification can-not be obtained without this; therefore, Montreal potash, wood ashes, or any other impure form of potash, will not do at all. Pure caustic potash is a very deliquescent article that soon melts away when exposed to the air; therefore, small packages just sufficient for one operation, are very necessary. Caustic soda has been frequently sold to the public as pure potash under the name of rosh potash, or ball potash, in one pound packages. It is needless to add, after the foregoing remarks, that these articles not be-ing real potash at all, are entirely unfit for soft soap making.

The calculation of cost of this potash soap

or lubricating purposes, depends somewhat whether the price of the oil and potash is taken at retail or wholesale figures. Even with retail prices the cost of production will not exceed about 7 cents per pound. With cotton-seed oil and wholesale prices it can be produced at about 5 cents per pound. be produced at about 5 cents per pound, which, considering that this soap contains only half the quantity of water an ordinary soft soap usually contains, would be equiva-lent to buying an ordinary soft soap at about

2½ cents per pound.

About six pounds of pure potash soap combined with eight gallons of water and three gallons of oil, make a good "suds" for wire drawing. The best way of making the suds gailons of on, many of making the suds drawing. The best way of making the suds is as follows: Put the six pounds of potash soap into a bucket with two gallons of ho steam water. Heat it up so as to thoroughly dissolve the soap, with a hank of wire used as a whisk. Then add the other six callons of water, and lastly, three gallons gallons of water, and lastly, three gallons of best pale seal oil, which should be thoroughly stirred into the soap and water so that on standing all night the oil will not separate out. This mixture will be found to give very good results.

Forging a Large Shaft.—The engines for the Old Colony steamship, to be called the Pilgrim and which will be about 70 feet longer than the Providence and Bristol, are now being built at the Morgan Iron Works in this city. The two shafts for these engines are the largest ever forged One. these engines are the largest ever forged. One of them is ready to be turned and finished, and the other is now in the forge. The material used is made up of scraps of boiler plates, nuts and screws and horseshoes, and is first run into bars two feet or more in length. The shaft is built by welding to-gether from four to six of these bars, properly steam hammer. An additional number of bars is then welded on to the end, this operation being continued until the shafts now making are 40 feet long each, with a diameter varying from 27 to 30 inches. They weigh varying from 27 to 30 inches. They weigh over \$1,000 pounds. The shaft of the steamover \$1,000 pounds. The shaft of the steam-ship City of Rome is perhaps as large an example of a shaft forging as now exists. It is of steel, and but 22 feet long and 26 inches in diameter, with a ro-inch hole through the center. The shaft for the Pilgrim already done was forged in thirteen days and seven

A New Coke Oven.—Mr. W. G. Merriman, of Pittsburgh, has taken out a patent for an improved coke oven upon an entirely new principle. The old forms of beehive ovens have been used for a long time, without any practical improvements, and although they are very wasteful, both of material and labor, the industry has grown. With the improvement of Mr. Merriman the coke industry will commence a new expansion, to which its present magnitude is only a start. The distinctive character of Mr. Mer-riman's oven is that instead of the old beeriman's oven is that instead of the old behive form, it is built with a longitudinal chamber, with vertical side-walls and arched top, thus holding a charge about 50 per cent. Larger than that now put in an oven. The oven is charged and drawn through a door at the side, which can be closed so as to prevent the entrance of the air, and thus increase the yield of coke. Upon the floor is laid an iron framework, with a cross-piece at the rear of the oven, upon which the charge rests, and when the coking process is completed the entire mass is drawn at once by the application of steam power to the framework. This does away with having any small coke, bringing the whole charge

out in one mass, and insures an increased yield of coke of superior quality.—Greensurg Press.

The Nova Scotia Mining Report.

The report of the Nova Scotia Department of Mines is an interesting pamphlet. The following summary shows the mineral products of Nova Scotia for 1881, as compared with the previous year

with the provious your.		
	188c.	1881.
Gold, ounces	13,234	10,755
Iron ore, tons	51,193	39,899
Manganese ore, tons Ceal raised (English weight)	223	331
tons	1,032,710	1.124,270
Gypsum, tons	138,528	107,133
Building stone, tons	3,540	6,638
Barytes, tons		40
Coke made, tons	13,125	37,871
Fire-clay, tons	75	40E
Grindstones, &c	1,500	1,680

The total sales of coal for the year 1881 reached 1,035,014 tons, as against 954,569 in 1880, being an increase of 80,355 tons. The most noticeable points of the trade were an increase of 59,430 tons in the home sales, the returns showing 382,343 tons, against 322,913 tons in the year 1880. The coal sent to the Province of Quebec amounted to 268,628 tons, an increase of 29,537 over the shipments of the preceding year. The sales to New Brunswick footed up an increase of 25,709 tons. To Newfoundland they fell off some 7452 tons, and the sales to Prince Edward Island showed a slight de-Frince Edward Island showed a slight decrease; 9695 tons less than in the previous year were sent to the United States, and the trade to the West Indies was increased by 9455 tons. The business with other countries remained unchanged. The total yield of gold during the year was 10,756 oz. 13 dwts. 2 grs., as against 13,234 oz. in 1880. The returns from unproclaimed districts amount to 2446 oz. o dwts. 13 grs., an inamount to 2436 oz. 9 dwts. 12 grs., an increase of 1504 oz. 4 dwts. 17 grs. over the previous year. The continued decline in the produce of several districts which have hitherto yielded uniform returns, has outweighed the increased production of several

Dry Docks for Large Ships.—The second of the dry docks at Erie Basin, which were unused for many years until William Cramp's Sons, the shipbuilders, leased them, has been completed, and the Inman Steam ship City of Brussels is occupying it to have her bottom cleaned and painted. No other dry dock in the country would have accommodated her, and other large steamships are awhiting their turn. The two docks, each of awaiting their turn. The two docks, each of which holds more than 6,000,000 gallons of water, are 540 and 630 feet in length, respectively, and were originally constructed with Boston capital, and, under control of Boston business men, were unsuccessful. It has taken two years to rebuild them at an expense of \$1,500,000. A board of inspectors detailed by the Secretary of the Navy have recently made a report on the capacity, facilities and construction of the docks. They were imconstruction of the docks. They were impressed with the efficiency of the iron caissons, or floating gates, made with sloping ends corresponding with the slope of the side-walls; and the absence of grooves in the abutments, permitting the opening and closing of the docks in the shortest time without difficulty. The smaller of the docks has been finished four months and has been idle only four days.

The character of German emigration becomes a subject of much interest, if we consider the large proportion which this nationality bears to the total. An analysis of the industrial qualifications of the 68,887 persons who left Hamburg last year, as fur-nished by United States Consul Baily at that cort gives the following results:

	German pire		Other o		Total.	
	No. of persons.	Per cent.	No. of persons.	Per cent.	No. of persons.	Per cent.
Agriculturists, Mechanics Merchants Laborers Miscellaneous. Without pro- fession	9,063 10,105 2,721 10,064 1,543 8,691	66.08 71.40 36.88 65.30 62.49	4,652 4,027 4,656 5,666 926 6,173	33.92 28.50 63.12 34.70 37.51 41.53	19,715 14,132 7,377 16,330 2,409	100 100 100 100
Grand total.	42,787	62.11	26,100	37.89	68,887	Ioc

How the German element predominates in mechanics and the arts is readily seen. This position they are likely to hold conspicuously.

American commerce with Africa has materially increased within the last two years, particularly with Cape Town and the neighboring colonies, and with Natal and the Island of Zanzibar on the East coast. indication we may point to the fact that two a pier on the East River, one for Cape Town and the other for Port Elizabeth, and both and the other for Port Elizabeth, and both under the auspices of a hardware firm in Chambers street. Our exports of hardware and implements alone not infrequently amount to \$6000 or \$8000 per week. Manuamount to \$6000 or \$8000 per week. Manufactured cottons also make a considerable factured cottons also make a considerable item. The only unfavorable feature is that our imports are disproportioned to the exports, and are becoming more so as trade develops. It is also to be observed that this trade, formerly almost monopolized in Boston, is now mainly concentrated in New York. Sea captains here say that a direct steamship line could be successfully established.

The exclusive governments of the Orient, like Siam and Corea, are yielding reluctantly, but perceptibly, to the march of modern improvements. Like China, the most stubborn opponent of progress, Siam is about to introduce the electric telegraph, a like heirs in contamplation between Bankok line being in contemplation betweeen Bankok and the Cambodean frontier. French capi-

The Iron Age

Metallurgical Review.

New York, Thursday, April 20, 1882.

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CONTENTS.

First Page .- Porter-Allen Steam Engine Applied to Rolling Mills.

Third Page. - The Production of Sound Ingots and Steel Castings. The Temperature of Tun-nels. Suggestions for Improvement in Elevated Railways

Fifth Page, -Porter-Allen Steam Engine Ap plied to Rolling Mills (Concluded).

Seventh Page. The Bronze Age of Britain.
The Mineral Wealth of Virginia. Utilization of the Refuse of Mines. Expansion of Hard Caout-

Ninth Page .- The World's Wheat Crop. Dan ger Signals on the Atlantic Coast. German Tariff

Eleventh Page.—Iron Making in South America. Tensile Strength. Lubricating Scaps for Wire Drawing and Similar Purposes.

Thirteenth Page.—Lubricating Soaps for Wire Drawing and Similar Purposes (Concluded). Forging a Large Shaft. A New Coke Oven. The Nova Scotia Mining Report. Dry Docks for Large Fourteenth Page .- The Extension of the

Siemens Patent. Relative Expenses of British

and American Steam Navigation. The German Pig Iron Industry. William Menelaus. Fifteenth Page.—William Menelaus (Concluded). Career of a Notable Mercantile House. The Demand for Increased Wages at Pittsburgh. The Iron Exchange Movement.

Seventeenth Page.-Washington Notes Nineteenth Page.—Washington Notes (Con-uded). Activity Among the Ironworkers of San rancisco. Structural Steels.—III. The Threat-led Wringer Infringement Suits. Reclaiming the Zuyder Zee.

Twentieth Page .- Reclaiming the Zuyder Zee

Twenty-first Page.—Trade Report—British Iron and Metal Markets. Financial. General Hard-ware. Iron. Metals. Twenty-second Page.—Metals (Concluded).
loal, Old Metals, Paper Stock, &c. Foreign Trade
fovements. Imports. Exports. Philadelphia.

Twenty-third Page.—Philadelphia (Concluded), Pittsburgh Chicago, Chattanooga, Cincinnati, Louisville, St. Louis, Baltimore, Richmond, Our English Letter,

aond, Our English Letter,

Twenty-fourth Paye.—Our English Letter
Concluded). Foreign. New England Manufacmers' and Mechanics' Institute. Industrial

Treenty-sixth Page.—Industrial Items (Concluded). An Improved Automatic Fire Alarm and Fire Extinguisher. Puddlers Wages at Pittsburgh. Labor and Wages. Thirty-first Page .- The Iron Age Direc-

Thirty-second Page .- New York Wholesale Thirty-fourth Page .- New York Wholesale

Thirty-fifth Page .- New York Wholesale Thirty-winth Page.—Philadelphia and Pitts-burgh Hardware and Metal Prices.

Fortieth Page.-Boston Hardware and Metal Prices.

A case of considerable importance in connection with strikes, and the employment of men to take the places of strikers, has just been decided at Pittsburgh. The case was heard before an alderman and no defense was submitted, so that it cannot be regarded yet as settled law. The Excelsior Coffin Works at that place had a strike among its men, and one of the firm went to Philadelphia and engaged several men to come to Pittsburgh to take the places of the strikers, representing, so the men engaged swore, that no strike existed, but that the firm wanted young men, because nearly all their old employees were getting up in years owned property, and did not care to work steadily. No witnesses were examined for English House of Commons, and a motion to 24 hours.

ment in favor of the plaintiffs. They claimed involved did not aggregate over \$120. The attorney for the defense gave notice that he would appeal the case to court. The firm claim that no strike did exist at their works, and that no misrepresentations were made. The trial and decision of this case can but be of the highest interest and importance. will probably involve the decision of the question of what is a strike, and whether hiring men under a statement of no strike when a strike was in progress, is such a false pretense" as will vitiate a contract. If this case is fought by both sides as vigorously as possible it will settle some interesting points, and that these points may be settled we hope it will be pushed.

The Extension of the Siemens Patent.

As was presumed in our editorial of April 6th, the attempt to secure an extension of the Siemens patent in the regenerative furnace has received the active support of at least one steel manufacturer. At the hearing on this extension before the House Committee on Patents, on Thursday, the 13th instant, a prominent steel manufacturer of Pittsburgh, who is also an officer of the American Iron and Steel Association, is reported by telegraph to have appeared and advocated the extension of the patents, very much to the surprise of the attorney who was opposing the extension, who had been counting on his assistance. It is understood that the reasons assigned by this gentleman for his advocacy of the extension were, that he had spent a large amount of money on his plant and in payment of royalties, and if the patent was thrown open it would invite competition in the steel business, and that without payment of the heavy royalties he had paid, evidently overlooking the fact that he had paid the royalties only for the life of the patent which has now expired. Now, we do not impute to this gentlemen any other motives than those he has given, but it is a wellknown fact that the agents of the Siemen furnace in this country have lately sent a circular, how widely we do not know, to those having rights to use the furnace, that may have had some influence. The circular is as follows:

RICHMOND & POTTS, UNITED STATES AGENTS FOR SIEMERS' REGERERATIVE GAS FURNACE, NO. 119 South Fourth Street, Philadelphia, April 8, 1882.

Hussey, Howe & Co., Limited, Pittsburgh, Pa.: GENTLEMEN.—There appears to be a misunder standing as to the scope of the bill now pending before Congress for the extension of the joint patent of March 1, 1864, issued to C. William and Frederick Siemens. In each of the outright incenses granted by us, it is atipulated that the rights under the license embrace the extended erm of the patents involved, and just previous to term of the patents involved, and just previous to the expiration of the above-mentioned patent, upon consultation with a number of our licensees, it was determined to apply for its extension. It is not the intention to impose any further obliga-tion by the extension of this patent upon the furtion by the extension of this patent upon the furnaces in use, and in case the patent, as above
mentioned, should be extended by act of Congress, we are willing that our licensees shall have
the right to use all furnaces which they may have
constructed and used prior to the extension, without being held liable for infringing the extended
patent, and it is proposed to amend the bill now
before Congress to read as follows: "And provided further, that if a person, prior to the passage of this act, has made for use a furn ce or
furnaces embodying in its construction and operfurnaces embodying in its construction and oper-ation the invention described in the patent, such person shall have the right to use the furnace or furnaces, so mad e, without being held liable for infringing the extended patent." Trusting the above may be satisfactory to you, we remain,
Yours truly, Richmond & Potts.

It will be noted that this letter virtually throws the onus of applying for the extension upon the licensees. It was upon consultation with a number of their licensees that they determined to apply for the ex-

We again say we fail to see what right they have to the extension. By a law of Congress, passed after this patent was granted, all patents granted, both in this and for eign countries, expire in this country the same time that they do abroad. It was the deliberate conviction of Congress that this was just and this patent would have expired two or three years ago had it not been that it antedated this law; but that does not affect the principle that patents here should have no longer life than the same patent has abroad. This patent has had three years more, and it is absurd and outrageous that our manufacturers who wish to use it should continue to pay royalty for seven years more, making in all ten years after it has expired in England and after manufacturers there have ceased to pay royalty.

There is another feature of this extension. On steel that is produced in this furnace, or reheated in it, we will be at just that much disadvantage in competing with the same steel made in England with this furnace, on which no royalty is paid. This would be a virtual reduction of the duty by this amount. It is also suspected that there is something back of iron and steel manufacture for which the patentees wish the furnace patent extended, perhaps to prevent its use in glass manufacture and other industries from which in this country but little revenue has been derived. However, it cannot be extended for the use of these industries without compelling all industries to pay tribute. We have very little idea that the patent will be extended. We do not believe that the committee will report favorably to its extension, and if they do it will not pass the House.

the defense, and the alderman gave judg- inquire into the effects of foreign tariffs in British trade and commerce, which was only actual damages, and the entire amount avowedly a fair-trade resolution, received 89 votes. The notable feature was Sir Stafford Northcote's action in supporting the motion, while two years ago he denounced such an inquiry as injurious.

Relative Expenses of British and American Steam Navigation.

We have heard it asserted by an American steamship proprietor in the Havana trade, that with two steamers of equal capacity, running from the same wharf, one a chartered vessel under the English flag and the other home-built, the former did a much more profitable business. The reasons therefor, if exactly stated, would have a deep practical interest at the present crisis in our foreign shipping trade. They might indicate exactly what remedial measures are best calculated to restore our lost prestige. Almost a parallel case is presented in the experience of the American Steamship Company, of Philadelphia, which proves to have been a financial failure. Remarking on the fact, a Philadelphia correspondent of the London Times says :

In the financial part of the report is found an item showing that in 1881 the Pennsylvania Railroad advanced \$00,000 to pay the year's interest on the guaranteed bonds of the steamship company. This paragraph in the report has naturally caused a great stir. It has long been known that the American steamers were not paying, but the above statement indicated that the railway which has been their financial support contemplated ceasing its advances to the company. Except at the beginning of their career, the steamships have cone behindhand, and a short time ago the sum gone behindhand, and a short time ago the sum of the advances made for interest, &c., was capitalized by the railway in an issue to it of stock of the steamship company, so that new it holds the larger part of the stock. While the quotation of the stock is nominal, no dividends being paid, the 6 per cent. bonds are at no to no8, the interest being guaranteed.

In this line for several years the American and the British steamers have been running side by

the British steamers have been running side by side with exactly equal chance to demonstrate what could be done. The British steamers are better cargo ships, while the smaller American steamers devote more space to first-class cabin passengers. While the Americans do not earn their expenses, the English companies owning the others, I understand, make so per cent. annual profit right along. The rate of freight is equal, the facilities for getting and handling cargo are the same, but the expenses of the Englishmen are less, and in this they save enough to make their profit. I am told that it costs proportionately so to so per cent, more to sail the American than the English steamer in the same line. The management of the Pennslyvania Railroad, who have been paying the interest and making up the deficit for the American ships, have nothing of the kind to do for the Englishmen; yet the British fleet just as well accomplishes the railway's main object in going into the enterprise—the carrying of the same, but the expenses of the Englishmen are object in going into the enterprise—the carrying of the railway through freight from the West to Liv-erpool. Looking at the matter purely in a business light, and with the benefit of the experience that demonstrates that the freight carrying is accomplished as readily by the British as the American steamers, and with no outlay for investment or risk of guarantee, the railway has determined to advance no more money and guarantee no more bonds, as has sometimes been proposed, for the construction of additional American steamers for the line. There will be no cessation of the line, which has a valuable traffic; but the "British end" of it will grow larger, and I hear that one or two new and first-class cargo vessels are soon to be added from British shipyards. The experiment of a decade has taught that in the Transatiantic trade, owing to greater first cost and heavier sailing expenses proportionately to tonnage, American-built iron steamers cannot yet compete with

Aside from the expense to "heavier sailing expenses," it does not appear from the foregoing why the foreign vessel earned 10 per cent. per annum while her American consort was losing money. We are justified in looking for the true explanation in greater tonnage dues, charges and fees, extorted from American shipping under our Federal, State and municipal laws. These latter should be made the subject of a searching inquiry. If the difficulty lies here, of course the cry for "free ships" is started too soon. Let us try free shipping first.

The action of the Western Nail Association in reaffirming the existing card was fully justified by the reports received at the m ing, showing that the demand for nails the past three months was as active as the reasonable manufacturer could desire. make of nails for the first three months of the year was 250,000 kegs more than the first three months of 1881, while the stock on hand April I, 1882, was 150,000 kegs less than April 1, 1881. This shows a difference in the total consumption of 400,000 kegs The election resulted in the choice of the old officers: B. F. Jones, president; J. N. Vance, of Wheeling, and Gen. Charles L. Fitzhugh, vice-presidents; Joseph D. Weeks, ecretary and treasurer.

The steamship Alaska, of the Guion Line. which arrived from Liverpool on the 16th inst., has again beaten the record. This trip was accomplished in 7 days 6 hours and 20 minutes actual time, and was 23 minutes faster than her last outward trip, which was I hour and 5 minutes quicker than the best passage of the Arizona, of the same line, which vessel, until the appearance of the Alaska, had the reputation of being the fastest steamship affoat. During the wonderful passage which the Alaska has just completed considerable rough weather was encountered, the wind blowing from the westward the often ran very high. On several days she made a spurt of 171/2 miles an hour, and the

The German Pig Iron Industry.

Notwithstanding the efforts of the German Government to promote the pig iron industry of that country, or to cause a continuation of the healthy condition of the market which prevailed during a portion of the year 1879, a slow but steady decline in prices was experienced, and at the beginning of 1880 future prospects were anything but encouraging, and considerable depression was felt in all quarters. The sudden revival of the German trade in 1879 was probably, to a great extent, due to the large demand in the United States and to the consequently large importations but when the necessary improvements and extensions of German works had been made, and when American establishments were better prepared to satisfy American wants, the above-mentioned relapse occurred, and prices were again reduced until they ranked no higher than those reigning during the early part of 1879. Little improvement in this direction was experienced during 1880, and the year 1881 began with even less cheering prospects, so far as prices were concerned, although the demand appeared to be on the increase. During the second half of the year, however, some gratifying changes occurred, furnishing unmistakable evidence of subsequent improvements. The gradual and steady rise in the prices of ig iron which took place was, in general, considered as a very favorable indication of the revival of the market, this indication daily gaining in strength as the expectations of ironmasters were realized. The number of incoming orders assumed larger dimen sions, prices rose uninterruptedly through out the remainder of the year, and everything was in a promising and exceedingly gratifying condition. No anxiety and no fluctuations resulted from any external disturbing influences, and at the close of the year it was considered a recognized fact that the despondency which had hitherto brooded over the iron trade was a thing of the past, and that a sound basis for future prosperity and success had been established. The prices of pig iron were, as usual, subject to the same fluctuations as prevailed in England, and it is undoubtedly a matter of interest to know that any sudden and great variations in English prices were correspondingly represented in the German market. The prices in Germany, moreover, vary not only according to the quality of the material, but are influenced to a great extent by the time at which contracts are closed, and it is mainly due to this fact that the published quotations do not in all cases cor rectly represent the state of the market for the time being. The following table gives the prices of English pig in shillings per ton, and the prices of German pig in "marks" per ton for the beginning of each month of 1881, and also the prices prevailing at the beginning of January, 1882; the figures, though not absolutely correct, as we have disregarded the fractions of shillings and marks, offer an interesting comparison between English and German prices:

	Date	ebruary, 1881 ebruary	ay	ngust Live	eptember	ctober	ovember	Aduary, 1882
Great	Clevel'nd (Mid- dlesboro').	****	848	337	37	t	t	2 1
at Britain	W'rants (Glasgow).	\$\$ 55 S	348	331	4.	*	50	6 %
lain.	B'ssemer (Barrow).	n n n	200	255	28	05	63	2.3
	Puddled Iron.	2288	388	324	59	8	0	22
We	Foundry No. 1.	7373	222	377	70	72	74	75
Vestphali	Foundry No. 2.	2222	223	121	22	6	2	18
la.	Foundry No. 3.	888	S S S	5 5	55.54	36	00	800
	Bessemer.	2882	8 8	600	601	67	8	72
Upper	Puddled Iron.	5545	55.5	51 50-	2 2	40.5	8	04
er Silesi	Foundry No. 1.	2000	183	63	20	68	70	72
esia.	Foundry No. 2.	57 58	58	22	0 00	6	64	10
g,noq	Puddled Iron.	1000	307	376)	38	38	40	44
	Min 1) Min	9)				#1-	34	-

STROSPILISTES

1) Minimum, 45,10. 9) Min., 50. 3) Min., 48½.

So far as the production of pig iron is output in 1881 did not greatly exceed that of the year before, but the comparatively very large increase in the quantity of iron ore raised, suggests an increased output of the various blast furnaces for the current year, and it is, therefore, but natural to an ticipate considerable activity in the construction of new furnaces and in the blowing in of such as are at present undergoing repairs. There is little, if any, anxiety as far as over-production is concerned, since the rapid growth and extension of the different railways call for considerable quantities of material with which to conduct operations. Judging by such reports as are available at the present time, it appears that greater portion of the time, while the seas the imports of pig iron during 1881 somewhat exceeded those of 1880, Scotch and Bessemer hematite pig being in special deday before reaching port she performed the mand. The general introduction of the so completely revolutionized the iron trade. "Fair trade" has at last got a vote in the unprecedented feat of running 419 miles in basic process will probably soon allow the Mr. Menelaus correctly gauged the probable latter to be dispensed with entirely, while effect of the new discovery upon the old in.

Scotch pig will undoubtedly retain its present position until some German manufacturers are prepared to furnish foundry pig alone, and are able to produce a good quality of iron.

The German importations of Spanish, Italian, African and Dutch ores, which have lately increased to some extent, present a formidable barrier to the growth and progress of numerous small mining localities, and it has been a matter of much attention on the part of those interested to investigate whether it would be more profitable to smelt foreign ores, or whether it would be advisable to suppress their introduction and to confine ironmasters to the use of home productions. It must be admitted that the importations of ore from foreign sources are a benefit only to large works distributed among the different manufacturing centers, while small establishments which are spread throughout the country are oppressed and injured in a corresponding degree. It will have been observed from the foregoing remarks that the importations of iron ore and pig iron have been characterized by a steady increase, and it may therefore be well to say in this connection that the export has also experienced a marked improvement. We have not attempted to go into particulars as regards the trade in distinct sections of the country, but have merely reviewed, in as brief a manner as possible, the general outline of the pig iron trade during the year specified, leaving details to a future time

William Menelaus.

For the second time within the brief space of three months, we are called upon to mourn the death of one who stood foremost in the ranks of those actively engaged in promoting and extending the iron and steel industries of their respective countries. The death of Mr. William Menelaus, the famous manager of the Dowlars Iron Works, England, has deprived the British iron trade of its leading spirit, of a man who was an object of pride and emulation to every member thereof, and the intelligence of his death was received with profound sympathy and sorrow in every iron-making district in the country. The malady was of a kind and severity which precluded all reasonable grounds of hope for a favorable issue, and the end, which seemed inevitable from the first day of sickness, approached slowly, but steadily, and on Thursday morning. March 30, he passed quietly away. Notwithstanding the continuity in genius and talent which, perhaps, forbids the loss to be considered as irreparable, the death of Mr. Menelaus creates a gap which cannot be filled in a moment. Throughout his life, and more especially in the later period thereof, when his extraordinary ability as a practical maker of iron and steel had enabled him to occupy a prominent position in this vast industry, he most resolutely refused to afford the slightest response to the numerous applications for particulars of his history, and the memoir here given must necessarily lack completeness in some

Mr. William Menelaus was born in East

Lothian, Scotland, on the 10th of March, 1818, and he had, therefore, but recently completed his 64th year. After spending his educational years in the locality in which he was born, he was for a short time connected with a firm of engineers at Haddington. While in London, in the year 1843, he was engaged to undertake the repairs of a mill, and the execution of the work gave such satisfaction that he was subsequently sent to the Abernant Iron Works for the purpose of erecting some large machinery. Here, too, he gave evidence of that wonderful practical ability which so distinguished him in later years, and a short time after he was appointed engineer to the Aberdare Iron Company. In that capacity he remained until 1850, having altogether been at Abernant a period of seven years. Upon the death of Sir John Guest, the trustees, Mr. G. T. Clark and Mr. H. A. Bruce (now Lord Aberdare), assumed the direction of this leviathan concern. The manager at that time, Mr. John Evans, retired upon a pension, and the trustees conferred upon Mr. Menelaus the appointment of general manager of the Dowlais Works and col-This position was one of immense responsibility and power, for it must be un derstood that Mr. Menelaus was not an ordinary manager, subject to certain limits for reference. The trustees believed they had found in him a fitting man for the active direction of the great concern, and they left oncerned, it should be stated that the total him unfettered, with unlimited discretionary powers. How well he justified their judgment and choice is best attested by the enor mous strides of the Dowlais Works under his management. Those who remember what the Dowlais Works were when Mr. Menelaus was promoted to the general management and know what they are at the day of his death, can best appreciate the prodigious energy, the marvelous skill, and the inces sant activity of head and hand by which these grand results were brought about.

The management of Mr. Menelaus was characterized by a spirit of unbounded enterprise. He was one of the earliest men to give a practical hand of sympathy to Mr. Bessemer, and the Dowlais Works were associated in the most honorable manner with the development and final success of the brilliant, but simple invention, which has

dustry, and with commendable forethought laid down a Bessemer plant, which enabled the Dowlais Company to enter into the manufacture of steel at the earliest moment, and it is the boast of the Dowlais Works that there was rolled the first steel rail ever sent forth into the open markets of the world.

Prior to this, however, were the attempts to solve the question of mechanical pud-dling, in which problem the efforts of Mr. Menelaus were almost rewarded by success. It was long before Mr. Danks, whose name has since been so prominently identified with mechanical puddling, ever attempted to put his notions into practice that Mr. Menelaus had experimented with a rotary furnace at the Ifor Works, at Dowlais. The respective systems of these two gentlemen were, singular to state, exactly identical in principle up to a certain point. Under Mr. Menelaus's system pig iron was converted into large and tolerably homogeneous masses of puddled iron, but the difficulty lay with the interior lining, technically known as the fettling, which became dislodged and broke up as the contents of the furnace assumed a condition of malleability. The detached fragments wandered to and fro in a most tion of the enormous business of the firm; fessed to have overcome, but, for some reason not understood, his scheme was mills at Glenham, which are still running; never adopted at Dowlais. If Mr. Men-two mills at Leeds, Greene County; one each elaus failed as an original inventor, as an adapter he was singularly successful. The application of blast to furnace, engine and smithy fires, the introduction of the coalwashing machine, new forms of steam hammers, rolling, blooming and other processes connected with the manufacture of the finished rail of iron or steel, were all and severally innovations which kept the gigantic Mr. Stewart removed on quitting the less concern with which he was connected well pretentious abode in Bleecker street, with abreast of the times. As a general business manager and as a

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ruler of men, Mr. Menelaus's abilities were conspicuous, few being equal to him in this respect, and none surpassing him. He was the founder of the South Wales Institute of Mining Engineers, of which he was the first president, an office which he filled a second time, and which would have been conferred upon him for the third time in October last had the state of his health permitted him to have accepted the honor. He was also one of the founders of the Iron and Steel Institute of Great Britain, of which he was elected president three or four years after it was inaugurated, the president of the first year, when the Institute visited Merthyr, being the Duke of Devonshire. In 1879 Mr. Menelaus was presented with the Bess Medal of the Institute, in recognition of the great service he had rendered in developing the Bessemer process of steel-making. volunteer movement was another matter in which Mr. Menelaus took a very active interest. He was one of the originators of the movement, and one of the first officers of the Dowlais detachment, with which he was connected for a period of something like ten years. He was connected with the Dowlais Iron Works for a period extending over thirty-two years, and the growth of this gigantic establishment while under his care s shown by the fact that the weekly output of iron has been nearly quadrupled, in addition to which extensive tin-plate works have been started, turning out large quantities of plates in lieu of iron rails, and there is no reason for doubt that if Mr. Menelaus's health and strength had remained unimpaired he would have made still further extensions and improvements. It could scarcely be said of Mr. Menelaus that he was of a literary turn of mind or a great speaker; but he was a considerable reader, and no man could express himself with better effect in conversation and state his meaning more clearly. He had a vast store of general knowledge, and could enter into and sustain a discussion upon an inconceivable variety of subjects outside his own specialties. He almost always acted upon the rule of having daily reports from all the various departments under him, each of which he minutely examined himself, so that he possessed a full and perfect knowledge of the position of every portion of the works, and the variations of every twenty-four hours. Another feature of his success was undoubtedly his untiring perseverance, his great regularity and his close application to his work, which persistent application was probably the cause of his death at a comparatively early age. Mr. Menelans, besides being general manager of the Dowlais Iron Works, was largely interested as partner in the Treforest Steel Works, the Tredegar Iron and Coal Company, and in several large collie-It does not appear, although acknowledged to be a man of great wealth, that he ever invested any of his money in land or houses, his investments being all in those great undertakings which lie at the foundation of the commercial greatness of England.

Mr. Menelaus's first attack of illness was in November, 1879, when he was prostrated by inflammation of the brain. He recovered, but was a greatly shattered man. Yet he resumed his active duties and continued them until another attack, some twelve months ago, imperatively demanded a discontinuance Since that time a constantly vary ing contest between constitutional vigor and disease has been going on, and it was with extreme regret and profound sorrow that we heard of his death, caused by a recent and severe relapse.

Horatio Seymour, Jr., late State Engineer of New York, is about locating at Marquette, Mich., as superintendent of the Michigan it will be with the manufacturers, is that the

Career of a Notable Mercantile House.

The retirement from business of the old firm of A. T. Stewart & Co. marks an era in ference adjourned to April 28. the mercantile history of New York. Many of our citizens now in mature life well remember the humble beginnings of the man who afterward became the "Merchant Prince." With small capital, and but little business acquaintance, Stewart ventured to take half of a store on Broadway, opening with a fresh lot of Irish linens just from Belfast. We remember his own jocular description of the pine-board partition that separated him from his nearest neighbor. The short period of 57 years, dating from 1825, has sufficed to witness the culmination, decline and disappearance of the most powerful and prosperous mercantile firm New York has ever had. In the meantime the marble dry-goods palace on Broadway was built on the site of the old Washington Hotel, corner of Broadway and Chambers street, also the six-story building on Broadway and Tenth street-the latter property costing about \$2,750,000-which structures tion of the enormous business of the firm; unsatisfactory manner, and often formed meanwhile, too, the firm became extensive around the glowing mass incrustations of a owners of mill property, for the manufaccharacter which greatly interfered with its ture of goods sold in the New York warenormal purity. This defect Mr. Danks pro- house, all of which is now offered for sale. There are included three carpet and woolen at Stuyvesant, Columbia County: Utica, Washington Mills, Little Falls, Woodstock, Vt.; Holyoke, Mass.; and Franklin, N. J. Other evidences of accumulated wealth are seen in the chapel and mausoleum at Garden City, L. I., and in the unfortunate "Woman's Hotel," on Fourth avenue, as well as in the beautiful marble mansion, to which its stable entrance conveniently near to the front door, after the fashion in France. As to the place where the bones of the great merchant lie buried, it can be said, as of those of the ancient law-giver of Israel, "no

man knoweth to this day." It has long been known that Mr. Stewart's successors were not successfully carrying on the business he founded and built up, and that the house had actually declined to a second or third place in the scale of mercantile greatness. Judge Hilton lacked neither capital nor confidence, but he lacked the mercantile ability of Mr. Stewart. His retirement from the unequal contest with difficulties which were too great for him, shows very clearly that A. T. Stewart's success was due to something else than his name, and that he has left no successor who can keep in motion the mighty productive and distributive system which, under his hand, moved without jar or friction.

The Demand for Increased Wages at Pittsburgh.

The Pittsburgh manufacturers who were wicked enough to read the Sunday papers of last Sunday, were treated to a genuine surprise at the announcement that the district convention of the Amalgamated Association. which met at Pittsburgh the day before, had agreed to demand a considerable advance on many of the scales in force in the mills, the demand being from 10 to 30 per cent. This was especially a surprise, as the committee of the association who met the manufacturers a year ago, promised if the demands then made were agreed to there should be ne advance asked in the scales then in force, with possibly two exceptions.

The demands covered the price for boiling, muck rolling, scrapping, busheling, old rail piles, faggots, sheet mill knobbling and engineers' scale. The puddlers demand \$6 per ton for boiling iron when the card rate is 21/2 cents, instead of \$5.50, the price which ruled last year. The relative gradations are unchanged. The bar-mill hands also demand 10 cents per ton extra on all old rail piles and faggots made into finished iron on har mills. The sheet-mill scale is to be advanced 15 per cent., and some extra on specialties. The scrappers' scale is to be advanced from \$2 to \$2.25 per ton for piles on boards, and half price for busheling on sand or cinder bottoms; when working sheet iron and swarth, to be \$4.50 per ton. The knobblers now make 2450 pounds to the ton, and they demand that this be changed to 2240 pounds to the ton, the same as other labor. A scale was also decided upon for all rolling-mill engineers, with a basis of \$3.25 per day on the 2 5-10, with 25 per cent. extra for chief

On Monday, committees from the Amalgamated Association and the manufacturers met to discuss the demand. In support of this general increase, representative mill men advanced various arguments. The increased cost of living was one of these, and the fact that for some months iron has been sold right up to the 2.5 rate was another. But the principal argument, and the one most persistently urged, was, first, that by far the greater portion of the iron boiled in this city is worked up into extras and specialties, upon which the manufacturers reap large profits; and, second, that \$6 per ton for puddlingthe scale upon which all others rest-is no more than has been paid heretofore, vis., in 1868, a period, they claim, when the condition of trade was no better than at present.

wages of puddlers are out of all proportion to those received by other mill workmen. The manufacturers intimated that the demand could not be acceded to, but the con-

We have so often been called upon to criticise the action of the Amalgamated Association of Iron and Steel Workers, that we are all the more willing, and anxious, indeed, to give its officers credit when they refuse to approve of the ill-judged and absurd actions of its members. There have recently been two cases at Pittsburgh in which the officers have summarily ended strikes. One was a strike against the employment of colored puddlers, and the other a strike by some of the puddlers who had been reduced in the grade of their work by reason of making bad iron. In both cases the men were ordered to resume work. In one of these strikes the workmen gave the true reason of the strike, that "they would not work with niggers," but in the other, as is too often the case, a false reason was given, that "they would not work with non-union men." It is in cases like this that the advantage of a union appears, as its power is sufficient to compel the obedience of its unwise and hot-headed members. It is a fact generally conceded at Pittsburgh, where the Amalgamated is the strongest, that there are not nearly so many petty strikes as there were efore the union became strong. When a strike occurs it is a matter of moment, and the petty annoyances that were formerly of almost every-day occurrence are largely a matter of the past.

Enormous as was the emigration last year, the intelligence from across the ocean is to the effect that it will be much greater this year. The ocean steamers are increasing their accomodations, both by enlarging space for steerage passengers and putting new vessels on their lines, and emigrants are crowding their additional accommodations It is almost impossible to comprehend the volume of this movement to our shores. During the calendar year 1881, the number of emigrants that arrived in the United States was 720,045, being much larger than during any preceding year. Mr. Nimmo, in his report for January of this year, makes some comparisons that give an idea of this immense influx. It exceeded the population of the State of Connecticut by 97,345, the population of Maine by 71,109, the population of Nebraska by 267,643, the population of Vermont by 387,759, the population of New Hampshire by 373,054, the population of West Virginia by 101,588, and the population of Rhode Island by 443,514, and it was less by only 127,417 than the aggregate population of the States of Colorado, Delaware, Florida, Nevada and Oregon. It also exceeded by 113,226 the aggregate population of all the Territories of the United States, exclusive of the District of Columbia

Those Pittsburgh engines that have been the source of so many newspaper items are again in trouble. First it is a valve chamber that has cracked, then a joint blown out, and nort a break somewhere else. Last week but one of the four monsters was at work, and on this depended the water supply of 150,000 people. Engine No. 4 has not been working for nearly two years. Engine No. 3 is completely broken down in conse quence of a ruined valve chamber, while No. is useless in consequence of the blowing out of a joint between the check-valve cham ber and the valve chamber. According to the statements of Engineer Lewry, the daily consumption of water in Pittsburgh is placed at 22,000,000 gallons. The capacity of engine No. 1, the only source of the city's supply at present, is something like 20,000. 000 gallons per day. It is said, however, that engine No. 2 will be put into shape immediately, but guarding against any possible start on a few hours' notice.

The present condition of freights between this country and England, while not absolutely unknown in the carrying trade, is very unusual. It is reported that the steamship lines running from New York to Great Britain are carrying wheat at one cent a bushel, while the Boston lines are carrying Chicago wheat free or paying a cent a bushel premium. This is not from competition, but shipments of freight are so low that this wheat is needed for ballast. The large emigrant trade is sending so many extra vessels to us that it is difficult to get them ballast.

George W. Gill, agent of the Worcester fron Works, dropped dead in his office, at Worcester, Mass. 13th inst. He was a large owner of railroad property in New England and the West, and a director in the Norwich and Worcester, Chicago and Eastern Illinois, and Rutland railroads. Mr. Gill had been a prominent Democratic politician, and was a member of the Massachusetts State Central Committee for years. He was a delegate to several National Conventions, and was one of the wealthiest men in Worcester.

Iron ore is now being shipped both ways across the Atlantic. "Anything for ballast, and never mind the freight," is the word at present, among the ocean steamship com-

The Iron Exchange Movement.

The Iron and Metal Exchange Company have issued the following circular, a copy of which did not reach us in time for insertion in our last issue :

NEW YORK, April 12, 1882. DEAR SIR: The Board of Directors of the Iron and Metal Exchange Company, Limited, hereby invite you to become an associate of the Exchange.

You are respectfully requested to accept or decline, by addressing me in writing on or before the 21st day of April, instant. In case of acceptance, please sign the paper inclosed and return to me.

Permit me to call your attention to the esolutions of the board, a copy of which you

will find annexed. Very truly yours,

EDWIN F. BEDELL, Secretary,

Box 1465, New York P. O.

Following are the resolutions referred to

n the preceding:
Resolved, That this board invite to become
associates of the Exchange 200 firms, individuals and corporations engaged in the iron or other metal business, as manufacturers, consumers, merchants and brokers; that the condition for admission as an associate shall be the acceptance, in writing, of an invitation to become such, and an agreement in writing to pay the sum of \$75 before the 1st day of May next, for the privileges of an associate from said 1st day of May till the 1st day of May, 1883.

Resolved, That the Secretary mail written

or printed invitations to the said parties, and request them to signify in writing their acceptance; and that the non-receipt of such acceptance by the 22d of April shall be construed as a declination to become an ssociate.

associate.

Resolved, That as soon as the time for acceptance has expired, the board will secure such room or rooms for an Exchange as will amply accommodate the number of associates

who shall have accepted.

Resolved, That when firms shall become associates, each and every copartner of the firm shall be entitled to the privileges of the rooms; and when corporations become associates, each and every executive officer of the corporation shall be entitled to those priveleges; and each associate shall have the right to designate one salaried employee to have the privileges of the rooms, but application must first be made to the board, and such employee must be approved by vote in the same way as if he were a candidate to ecome an associate.

Resolved, That from and after the 22d day

of April, inst., no person can become an associate without an application to be made by him in writing in a form to be hereafter prescribed.

Resolved, That the holding of stock in the

company shall not entitle any person to the privileges of the rooms; but such person may become an associate without being voted upon by the board, on complying with the same terms as are required from other

associates.

Resolved, That it is the unanimous sentiment of this board that, after the Exchange has gotten into successful operation, the capital stock should be increased by 125 shares; that the privilege of taking the new shares should be given to associates who are not now stockholders; that the wishes of all the associates should be consulted in the selection of such new stockholders; and that each year there should be an increase of the stockholders in a like manner, till eventually all gentlemen in good standing in the trade shall have the opportunity to become mem-bers of the corporation.

Following are the names of the parties under whose auspices the Exchange is organized: Thomas Iron Co., Naylor & Co., The Burden Iron Co., J. B. & J. M. Cornell, Cooper, Hewitt & Co., National Tube Works Co., Wm. H. Wallace & Co., Wither-Works Co., Wm. H. Wallace & Co., Witherbees, Sherman & Co., Edward Beck & Co., Albany & Rensselaer Iron and Steel Co., E. S. Wheeler, O. E. Schmidt & Co., Lackawanna Iron and Coal Co., B. F. Judson, James R. Thompson & Co., Crocker Brothers, Port Henry Iron Ore Co., David Thomson & Co., Manhattan Iron Works Co., Catasauqua Manufacturing Co., Thomas J. Pope & Bro., Joliet Steel Co., George A. Evans, Abraham S. Patterson, James Williamson & Co., The wording of the last resolution in the above circular is considered by the trade as intimating that the members of the company have decided that it is wise to modify in some respects their original plan of organiza-

mishap, the engines at the old water-works some respects their original plan of organiza-have been lubricated, and are now ready to tion. We are not informed as to what the company really intend, but it has been stated that they have decided to admit twenty-five other stockholders, and that these fifty will choose another fifty, bringing the total number of stockholders up to 100. The request to accept or decline the invita-tion in writing, on or before the 21st of April, is not favorably regarded by many in April, is not favorably regarded by many in the trade, as it is understood as intimating that those who do not express a desire to join within the time specified will have difficulty in securing admission should they subsequently apply. We do not know that this suspicion has any warrant in fact, but if not, the circular is so worded as to convey a warrant in fract. wrong impression. The movement to found an exchange which has been started among the brokers is making good progress. circular published in our issue of two weeks ago has been favorably received by a great nany in the trade, and a good many tures have been obtained to it. At an informal meeting, held on Saturday last in the office of Mr. Edward P. White, metal broker, 55 Fulton street, New York, forty-seven natures were shown as having been actually placed upon the paper, and it was prom ised that within another week the number would be increased to 100. They desire it to be understood that this movement is not intended to be hostile to the Iron and Metal Exchange Company, Limited. It is simply independent of it, and merely carries out a independent of it, and merely carries out a plan proposed by a number of gentlemen in the trade before the committee of nine, which organized the Exchange Company, had been appointed. The signers to the paper propose to organize an exchange open to all applicants on an equal basis of mem-bership and control, and are by no means confined to brokers. The list, when filled, will be found to contain the names of a good and look of the same place, to receive the report many leading houses connected with or di-

trades. The reason this movement is started is simply because those interested in it do not believe that an exchange organized on the principles proposed by the company will be a success, or meet the wants of the trade. They believe that an exchange should be controlled by its members, and that all who do business on its floor should have a voice in the election of its officers and the fram-ing of its rules. Both branches of this Iron Exchange movement seem thus far to have made headway, but whether we shall have one or two exchanges, or none, is, we should say, still somewhat uncertain.

An adjourned meeting of representatives of the Iron and Metal Trades was held at Delmonico's yesterday afternoon, with reference to organizing an Iron and Metal Exchange. Mr. E. P. White occupied the chair and E. J. Shriver was chosen secretary. On motion, the secretary read a paper setting forth the objects for which they were assembled, some 25 or 30 gentlemen being present during the deliberations. This statenent is as follows:
At the meeting of the iron and metal trade

held on the 15th of February, the absolute necessity of establishing an Iron and Metal Exchange was recognized, and a committee was appointed for the purpose of arranging the preliminaries. The action of this committee, however, does not meet the intentions originally expressed, for all the steps taken by the same have been toward the organization of nothing more, so to say, than a club, while the wants of the trade require an Exchange founded upon the broadest principles, similar to the other leading exchanges of this city.

In conformity with the institutions of our country, every member of such an Exchange ought to have the right to vote in the election of officers and on other important matters, and everybody whose application is approved by the Board of Managers ought to be eligible to the same.

The object of forming the Exchange, in the first place, is the establishment of fixed rules for the governing of the trade, for it is only too well known that the looseness now prevailing has led to innumerable differences and lawsuits, which otherwise might have been avoided.

Furthermore, the Exchange, by facilitating and concentrating the dealings in goods on the spot, as well as for future delivery, will thereby establish fixed market values In consequence the banks will be much more ready than they have been heretofore nore ready than they have been nerectore to advance money on warrants for iron and metals, the business will be facilitated, and New York will become the acknowledged center of it. The prosperous condition of the other exchanges of this city and of the iron and metal exchanges of Europe, especially the United Kingdom, are sufficient evidence

of this. The proposition is now made to the meet ing to organize the New York Iron and Metal Exchange, the membership of which is to be limited for the present to 200, each member to pay an initiation fee of \$100, and \$25 annual dues. After the 200 members have subscribed, the initiation fee is to be \$500, and the number of members to be admitted is be fixed by the Exchange. On this basis it is moved that petition be made for

the following charter:
Section 1.—That the members of the association known as the New York Iron and Metal Exchange, and all other persons who may hereafter become associated with them, be hereby ereated a body corporate by the name of the New York Iron and Metal Exchange, with perpetual succession and power to use a common seal and alter the same at pleasure, to sue and be sued, to take and hold by grant, purchase and devise real and personal property for the purposes of such

association.

Sec. 2.—The property, affairs, business and concerns hereby created shall be managed by a president, vice-president, treasurer and twelve managers who, together, shall constitute a board of managers, to be elected

annually, at such time and place as may be provided by the by-laws.

Sec. 3.—The purposes of said corporation shall be to provide and regulate a suitable room or rooms for the New York Iron and Metal Exchange, in the city of New to inculcate just and equitable principles in trade, to establish and maintain uniformity in commercial usages, to acquire, preserve and disseminate valuable business informaand disseminate valuable outsiness informa-tion, and to adjust controversies and misun-derstandings between persons engaged in business. The said corporation shall have power to make all proper and needful by-laws, not contrary to the Constitution and Laws of the State of New York, or of the United States.

Sec. 4.—The said corporation shall have power to admit new members, and expel any member, in such manner as may be pro-

vided by the by-laws.

Sec. 5. The Board of Managers shall annually elect, by ballot, five members of the association, who shall not be members of the Board, as a committee to be known and styled the Arbitration Committee of the New York Iron and Metal Exchange, to hear and decide any controversy which may arise between members of the Exchange. The said charter to be taken out after members have joined the association, and a committee to be elected for this purpose, as well as for arranging all

other preliminaries.

On motion of Allston Gerry, a committee of five was appointed, to apply for a charter, as follows: E. P. White, M. B. Flyun, A.

Ladenburg, Carl Mayer, E. J. Shriver.
A resolution was adopted unanimously,
that the draft of charter before the meeting represents the essential objects sought to be attained, and that the committee, as named above, have authority to change it only so far as may be necessary to meet legal require-

Moved and seconded, that an election of officers be held May 3d, provided 100 names are first secured. The Chairman reported that the list already had 39 names, and that in all 50 were pledged. Carried.

Mr. Shriver submitted articles of the proceed constitution, which were laid over for

osed constitution, which were laid over for further action.
On motion the meeting adjourned to April



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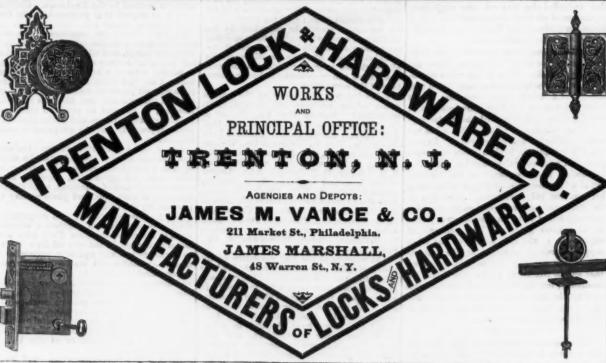
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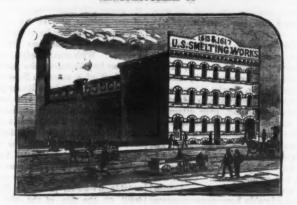
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WASHINGTON NOTES.

(From Our Own Correspondent.)

WASHINGTON, D. C., April 19, 1862 WASHINGTON, D. C., April 19, 1882.
The Committee on Ways and Means, after full consideration of the business of the House in general and the course of the debate on the Tariff Commission Bill in particular, at a recent meeting determined to proceed to the usual parliamentary forms of closing the discussion on that subject next week. The number of gentlemen who have placed their names on the list of speakers is so large that it would be impossible to have them all heard within that time, accordingly unanimous consent has been given to all members who may desire it to print in the

unanimous consent has been given to all members who may desire it to print in the Congressional Record such remarks as they may prepare upon the pending bill.

Mr. Jones, of Texas, was then permitted to print his views. This gentleman regards the bill under consideration as assuming the constitutionality and expediency of a protective tariff, and thinks the policy of protection is now presented under conditions greatly to the advantage of its advocates. So much so, in fact, that its opponents hardly So much so, in fact, that its opponents hardly know where to make a stand, or what practical issue to join. He does not think that much reduction of revenue is practicable, for the reason that \$1,000,000,000 will be required to meet pensions and arrearages alone in the next 20 years. He says that during that period the expenses of the Government will average \$350,000,000 a year, and to meet this the present tariff yields \$200,000, meet this the present tariff yields \$200,000,000, and the internal revenues \$137,000,000.
Therefore, it will be necessary to increase
the revenues by tariff or to resort to some
financial expedients not now employed. He
regards Mr. Hewitt's speech as the standard
authority on the free-trade side. As a question between parties, Mr. Jones says, "It is
now on the tariff as it formerly was on the
question of currency, that the Democratic
constituencies are not agreed, and that there
is great danger of demoralization and fatal constituencies are not agreed, and that there is great danger of demoralization and fatal disintegration if the questions involved are not fairly and squarely presented. All are agreed that the tariff should be revised."

Mr. Jones then enters into an elaborate opinion on the currency and national banks. The speech very clearly indicates that Texas is fast ranking herself on the side of protection, and Mr. Jones knows it.

Mr. Hubbell of Michigan, said that he was

Mr. Hubbell, of Michigan, said that he was in favor of the commission proposed by the bill, that the machinery of the system is so thoroughly interwoven with the welfare and life of all our industries that he would favor life of all our industries that he would favor material or radical change in our tariff laws, or any of their parts, only after the fullest and broadest inquiry into their probable effects. Such an inquiry he did not think practicable by the House in the hurry and scramble of legislation and the hundred conflicting interests which claim attention BEST 10-in. FORWARD CUT

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MINISTER WHINTH A CO. MINISTER ANDERSON HARDWARE CO., Indianapolis, Ind.

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He then showed from a summary of petitions presented to the Forty-sixth Congress that presented to the Forty-sixth Congress that 257 firms and corporations, employing 80,-867 mechanics and laboring men in these establishments, petitioned the last Congress for a Tariff Commission to revise the customs laws; that they want judicious, equitable tariff laws, and, above all, stability and rest from this eternal agitation, which unsettles the business of the country. He said that it is always safe and wise for which unsettles the business of the country. He said that it is always safe and wise for Congress to listen to and heed an intelligent public sentiment, when respectfully and earnestly presented by petition. In this case their opinions were the results of practical experience, unbiased by political prejudice, and for the purposes determining action were entitled to have great weight and consideration; that the laboring man, especially those who work in the iron mills and other manufacturing establishments, felt a deep interest in this Tariff Commission, and should this bill become a law, he earnestly hoped for them a representation on the comcand for the purposes determining action were entitled to have great weight and consideration; that the laboring man, especially those who work in the iron mills and other manufacturing establishments, felt a deep interest in this Tariff Commission, and should this bill become a law, he earnestly hoped for them a representation on the commission.

A representative who is directly familiar with the status of the Committee on Ways and Means, remarked the other day that he was much interested in watching the move-

STAR LOCK WORKS.

Stance, said he, there are only five out of the thirteen members of the committee who can be absolutely classed as high-tariff men; those are the chairman Judge Kelley, Russell Errett, of Pittsburgh, McKinley, of Ohio, Haskell, of Kansas, and Hubbell, of Michi gan. The ex-Speaker, Mr. Randall, while in favor of a tariff, is too much of a disciplination of his arian to ignore the potential dictation of his gan. The ex-Speaker, Mr. Randall, while in favor of a tariff, is too much of a disciplinarian to ignore the potential dictation of his party, so that while he will always be found on the tariff side of the line in debate, he will not have any serious controversy with his colleagues. Mr. Speer, of Georgia, appears in the same category, or, as the party of the first part designated it, they are protective tariff champions after a fashion. Neither of them are likely to split with their party should its mandate declare protection unconstitutional, tariff for revenue only the true theory of the powers of Congress to levy duties, or free trade as for the best interests of the majority. The course of Mr. Dunnell, of Minnesota, is well known, and was a surprise to everybody. It required no ordinary elasticity of political conscience to masquerade as a protectivetariff candidate for speaker, and as such to get on the Committee of Ways and Means, and upon the first opportunity to flop over

as a full-fledged free trader. Mr. Russell, of as a full-fledged free trader. Mr. Russen, or Massachusetts, a large manufacturer and dealer in paper, is for protection, but wants nothing done to fortify that important interest. Mr. Kasson, of Iowa, who is so dexterously engineering the Tariff Commission bill, is with the majority and very adroit in managing his affairs in this particular. During this discussion, when Hewitt resurrected some of his anti-protection speeches During this discussion, when Hewitt resurrected some of his anti-protection speeches
in 1866, after considerable wriggling, finally,
as the expression goes, "acknowledged the
corn," and admitted that in the broad day of
full information on the subject, he now conceded that protection of American manufactures and labor was the true policy of this
Government. In addition to the Republican
Dunnell, the Democrats Tucker, Carlisle and
Morrison, are unrelenting free traders. This
is the inside view of the Committee of Ways
and Means as it stands to-day.

is the inside view of the Committee of Ways and Means as it stands to-day.

Mr. Poindexter Dunn, of Arkansas, con tinuing the discussion, prefaced his harangue with a Biblical quotation which, presumably, he regarded as a Hebraic indorsement of his position, to wit: "And now, whereas, 'the fathers' did lade you with a heavy yoke, we will add to the yoke. Whereas, 'the fathers' hath chastised you with whips, we will chastise you with scorpions." He then launched out, basing his opposition on the ground 'that the bill was unconstitutional in lits spirit and purpose: unnecessary, in fact. ground that the bill was unconstitutioned in its spirit and purpose; unnecessary, in fact, and strategic, cunning and evasive in its motives. He believed it full of mystery, jugglery, unseen results and delusions. This motives. He believed it full of mystery, jugglery, unseen results and delusions. This was the burden of his story. He also congratulated the country upon the indirect opportunity which the bill afforded for a general discussion of the subject of tariff taxation, and for a general review of our own tariff system. He thought that it was well for the attention of the country to be drawn to this subject at once, being satisfied that when once the American people are drawn to this subject at once, being satisfied that when once the American people are brought to closely and dispassionately scrutinize the pernicious and iniquitous protective system, in his opinion they would brush it away like a cobweb, and provide in its stead a constitutional system of tariff revenues. He thought when the tariff is investigated in the light of the constitution it will be found now to be without constitutional warrant, and when viewed in the light. it will be found now to be without constitutional warrant, and when viewed in the light
of a wise economic national policy, he charged
it would be unwise and unsound. He continued by declaring that any foundation upon
which the present high protective system was
built has been withdrawn, and that there is
no reason in continuing it to plague the
people. Having begun with the Bible he
wound up with poetry.

So his spoilers come not singly.
But as if they watched and waited;
First the tariff, then the railroads,
Futures, corners, then the bankers,
gathering flock-wise
Round their victim, sick and wounded,
Till the air is dark with anguish.

Mr. Columbus Upson, of Texas, next ventilated his views in support of a revision and reduction of the tariff to a revenue basis, and quoted the language of members of the Senate and House in support of the doctrine. He denied the power of laying and collect ing taxes to aid or to give protection perse to private industries. He said free trade meant direct taxation, and showed that internal or direct taxation has been an unpopular measure, and generally avoided to meet extraordinary emergencies. To raise the principal revenue of the Government for the support of the Government by duties on imports, by tonnage, and the sale of public lands, has been so long in force that it has become the time-honored and settled policy of the Government. Mr. Upson then gave the wise injunction that should the representatives of the respective States of this Union carry the legacy of free trade and direct taxation home to their people as the fruits of their labors, political obituaries would be the order of the day all over the land. He was for revenue with incidental protection.

Mr. Updograff, of Ohio, followed in an Mr. Columbus Upson, of Texas, next ven-

the land. He was for revenue with inci-dental protection.

Mr. Updegraff, of Ohio, followed in an elaborate and forcible speech in favor of the commission, and showing the importance of a revision of the tariff to meet the demands of modern values and changes in commer-cial terms.

and Means, remarked the other day that he was much interested in watching the movements of the gentlemen composing that important committee and their views on tariff and other economic questions in the light of five months' experience. He said that it was originally supposed that the committee was overwhelmingly in favor of a high protective tariff, but that such did not seem to be the fact, as each member of the committee placed himself upon the record. For instance, said he, there are only five out of the thirteen members of the committee who can be absolutely classed as high-tariff men; those

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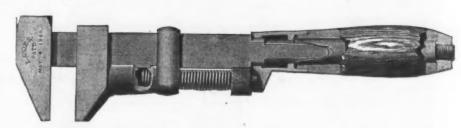
MANUFACTURERS OF THE

ORIGINAL GENUINE IMPROVED PATENT SCREW WRENCHES.

ESTABLISHED 1839.







We discarded the old Nut attachment nearly two years ago and applied the better device we are now using (covered by patent) for preventing the back thrust of the ferrule. The superiority of this invention over all others has been fully established by practical test. By reference to above cut (sectional view) our improved method will be readily understood.

We make the shank of our wrench about double the size of those in other screw wrenches, leaving it full

size, and strength by not cutting a thread.

Our Ferrules are made with two bearings, both fitting the shank.

An Iron Tube of sufficient strength to resist any pressure that may be put upon it, is fitted to the shank, one end resting against the lower bearing in the ferrule, the other against the enlarged Tip or Nut at end of handle, all rigidly held in position, the wooden handle made to fit exactly over the Iron Tube, forming a solid combination of Wood and Iron, preventing any possible displacement of the ferrule from hard usage. All our Wrenches are made with straight Bar, full size, the extreme length. The Jaw is made with ribs on the inside, running full length of the Jaw, which, in connection with the projecting sides, both secured by patent, are fully equal to any strain the Bar may be subjected to. We have also enlarged the barrel of the Jaw to take a larger and longer screw, enabling our Wrench to accommodate a larger Nut than any other manufactured. We make our goods of the very best material, thoroughly case-harden, and warrant every Wrench.

Manufactory at WORCESTER, MASS.

Warehouse, 97 Chambers and 81 Reads Streets, NEW YORK.

DURRIE & McCARTY, Sole Agents.

CHAPLIN'S PATENT

TRY SQUARE AND MITRE.

SPIRIT LEVEL AND

PLUMB.

A CARD.

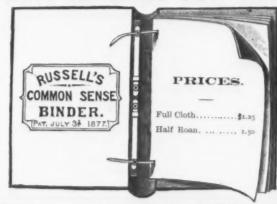
This Tool is manufactured under the original patent granted O. R. Chaplin, May \$, 1866, reissued May 4, 1880, for a Combined Square and Bevel, having an adjustable or sliding blade drawn to its seat by a clamp bolt. The public are hereby cautioned against the sale or use of a similar tool made and put into the market by another party, fraudulently claiming the invention as his own, under the name of "Starrett's Patent Adjustable Square." Proceedings in the U. S. Court for the District of Massachusetts were commenced against said party for infringement of the Chaplin Patent in July, 1880, and a final hearing was reached at Boston the second week in January last. The case now only awaits the arguments and decision of Judge Lowell. The aforesaid pretended inventor has recently commenced a counter suit against us, apparently for the express purpose of trying to frighten dealers by threat of

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A CARD TO THE WRINGER TRADE,"

Issued by F. F. Adams & Co., "Limited," in last week's Iron Age.

"WE HAVE MET THE ENEMY AND WE ARE THEIRS."

Understanding that F. F. Adams & Co., Limited, were intending to put upon the market the Wringing Machine called "America," we endeavored, through our traveling agents, to obtain the legal proof upon which to file a bill of complaint, alleging that the same was a serious infringement of some of our patents. Being unable to procure such evidence on account of the unwillingness of persons who had purchased such machines to testify to the fact, we were compelled to issue the notice printed by F. F. Adams & Co., Limited, in their "Card to the Wringer Trade " of last week.

The Circuit Court of the United States, Judge Wallace presiding, at the city of New York, on Saturday, April 8, 1882, required that the complainants, F. F. Adams & Co., Limited, should in open court stipulate "that a certain Wringing Machine marked 'America' on the frame, and marked upon one of the rolls 'Exhibit A, Adams Wringer, America, April 8, 1882,' is a specimen of Wringing Machines manufactured and sold by them," said complainants, "and which they are now manufacturing and selling," to the end that we might have the undoubted

legal proof upon which to found any suit for infringement.

F. F. Adams & Co., Limited, were compelled to comply with this order, and we have accordingly commenced two suits

for infringement. There is not one word in the decree prohibiting us from suing any person or persons who buy or sell Wringing Machines that infringe our patents.

F. F. Adams & Co., Limited, forget that Mr. Macbeth, who with courageous profanity requested Mr. Macduff to "lay on," finally got the worst of it, and was himself "laid out."

Our customers and licensees may be assured that we shall protect our patent property against infringements.

> METROPOLITAN MANUFACTURING CO., BAILEY WRINGING MACHINE CO., PEERLESS WRINGER CO.

The Best Wrought Iron

WHEELING HINGE CO., Wheeling W. Va.

proposed revision rather than an "irresponsible commission" to go instate sible commission" to go junketing about the country in order to teach Congress what to

Mr. W. S. Shollenberger, of Pennsylvania, Mr. W. S. Shollenberger, of Pennsylvania, spoke at some length in favor of the bill and, representing an important manufacturing constituency, showed by facts within his own knowledge that tariff revision is an absolute necessity, and he believed that revision should be in the interest of protection of American manufactures and labor.

Mr. John Hill of New Jarsey thought

Mr. John Hill, of New Jersey, thought the Tariff Commission Bill was the only method for a revision of the tariff which could be adopted which would satisfy all parties interested. He said that the cry of alarm by the free-trade speakers because the trade balance is in favor of Europe, is not to be found in the tariff, but in speculation and corners in the produce exchanges, which are doing incalculable injury to Western farmers, doing incatculation in jury to we seem I raimers, while protection is furnishing inducements for immigration, in that it provides the opportunity for the payment of higher wages to the operatives, and thus establishes a daily increasing home market which is infinitely better than a foreign one for our Western brethren. Mr. Hill then which is infinitely better than a foreign one for our Western brethren. Mr. Hill then entered quite elaborately into the question of labor in the United States, and showed its dependence upon the fostering care of prodependence upon the fostering care of protection. He then gave a comparative statement of weekly wages in Germany and the United States: Bricklayers, Germany, \$3.45; New York, \$12 to \$15; Chicago, \$6 to \$10.50, and the same proportion in the trades generally. In the matter of food prices, he showed that the difference was not in the same proportion. For instance: Bread per pound, Germany, 3 to 7 cents; New York, 4 to 4½ cents, and same in Chicago; roast beef, Germany, 22 cents; New York, 12 to 16 cents; Chicago, 8 to 12½ cents, and so in all matters; thus showing that while the price of labor was lower, the price of food is really higher. He then showed by consular reports the condition of German labor. Mr. Hill also showed the same thing in the relations of labor with reference to Denmark, Belgium, Italy, France Denmark, Belgium, Italy, France and England.

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and England.

Mr. Benjamin Wilson, of West Virginia, said that the question is not one of protective tariff nor of tariff for revenue only, but simtariff nor of tariff for revenue only, but simply a means proposed of obtaining the necessary information upon this great economic question to enable Congress to legislate intelligently upon the tariff, and with justice to all interests. He thought it was the most expeditious plan that could be adopted, as there are men who have devoted their lives when the country and what the country and what the country is the country and what the country is the country and what the country is the country in the country is the country and what the country is the country in the country in the country is the country in the country is the country in the country in the country in the country is the country in the country in the country in the country is the country in the country in the country in the country in the country is the country in the countr to these questions, and what the country needs is information that can only be ob-tained by experts. He then took up the Wood tariff bill, showing that it had been framed or acquiesced in by a committee of framed or acquiesced in by a committee of the speaker's own choosing. It was sus-tained on the floor by some of the able men who now oppose this bill, and yet that same Wood tariff bill fell so far be-low the demands of the people, was so obnoxious, that a House of the same political creed with the framers of it struck out the enacting clause and killed it. He said if the revision of the tariff is so easy, he would ask enacting clauses and animal it. Its said it the revision of the tariff is so easy, he would ask his Democratic friends upon the floor why it was that during the six years they had control there such revision was not made. He then showed that the Morrison bill shared the same fate from the same causes. The entire speech, in place of theories and platitudes, was filled with the question from a

sound practical standpoint.

Mr. William Ward, of Pennsylvania, would Mr. William Ward, of Pennsylvania, would support the bill, because it was founded upon correct principles. He very effectually exploded the beautiful speculations of Mr. Carlisle, showing that while in 10 years of high protection wages increased over 33 per cent., the profits of capital decreased nearly 1½ per cent. He then gave a comparative statement of prices of labor in the United States and Europe, already referred to United States and Europe, already referred to in the speech of Mr. Hill, of New Jersey, and showed that the habitations and home life of the working people of Europe are such as to excite our deepest commiseration. Low wages, long hours of toil, high prices for necessaries, make it a hand-to-hand struggle for existence. He then compared the American workingman's home, and concluded with the declaration that protection is the safeguard of the American workingmen's wages.

Representative Kasson, in charge of the

tariff bill, is urging such members as desire to speak on this subject to be present, so that the discussion may be concluded at the very earliest moment. In conversation tovery earliest moment. In conversation to-day, he observed that he could see no reason now why the debate could not close next week. At least he will strive to that end.

The following is the text of the decision just rendered in the splayed hoop iron case:

parts of the barrel for which it is intended. The appellant claims that it is dutiable at 35 per cent., as a manufacture of iron not otherwise provided for. Except in being splayed, iron. Your decisioned. Very respectfully,

(Signed) CHAS. J. FOLGER, Secretary. Mr. Leng, the appellant in the splayed hoop iron matter, having lost his case, now asks the Secretary of the Treasury to allow him to be heard by counsel. It is not likely of, say, \$3. There is, consequently, about that the request will be granted, and this question may be regarded as definitely disposed of.

FORGED AXLES.

data carefully collated is presented, so that no unusual delay need be expected.

THE SIEMENS PATENT.

The House Committee on Patents have petition of Charles, William and Frederick Siemens, for authority to make application to the Commissioner of Patents for the extension of their patent for a regenerative furnace. The memorials and affidavits in support of the petition are quite voluminous. The memorialists, agents of the patentees of the Regenerative Gas Furnaces, for which Letters Patent of the United States were first granted on the first day of March, 1864, and numbered 41,788, declare that they believe that the extension of the patent, as prayed for by the patentees, would be beneficial to the users of the furnace, in accordance with the policy of the patent laws, and an act of simple justice to the petitioners, for the following reasons: the following reasons:

1. The invention was new and useful when patented 2. The invention is valuable and important

to the public.
3. The inventors have not been reasonably remunerated for the time, ingenuity and expensedestowed upon it, and the introduction of it into public use, and this failure to be so remunerated has not arisen from neglect

or fault on their part.

4. The effect of the proposed extension will not be detrimental to the public interests; on the contrary, its effects upon the public interests, it is believed, will be highly

These reasons are the only ones which have been heretofore considered by the Commissioner of Patents and by Congress nave been heretorore considered by the Commissioner of Patents and by Congress in extending patents, and if established by competent testimony, it has always been held that the patent should be extended, even if the original term should have expired. They then quote largely from a number of scientists and scientific works to show the great economy of fuel and other advantages of this patent as follows:

Saving of waste in the metal treated.
 Economy in fuel.

2. Economy in fuel.

The Siemens furnaces, they claim, realizes a larger economy in fuel than that above considered; in another way it uses the cheapest fuel, such as "slack" coal of mines which was absolutely thrown away by the roo, coo tons before the introduction of this furnace. It uses as much as 25 per cent. of the sweepings of anthracite coal yards, mixed with 75 per cent. of slack hittuminous mixed with 75 per cent: at slack bituminous coal. It uses decrepitating anthracite and bituminous shales, which are unfit for other purposes; also peat, slabs and saw dust. There is not any known fuel so bad that it cannot make usable gas for the Siemens furnace, if it is properly treated in a suitable producer.

producer.

In view of all the facts the following memorialists, who are simply users of the invention covered by the patent sought to be extended, and who own no undivided or territorial interest therein, express the opinion that public policy, as well as justice to the applicant, suggests that the patent should be applicant, suggests that the patent should be extended as prayed for by the patentees: Otis Iron and Steel Company; Cleveland Rolling Mill Company; Jos. H. Brown Iron and Steel Company; National Tube Works Co.; Nashua Iron and Steel Co.; Anderson & Co.; Delaware Iron Co.; Morris Tasker & Co.; Joliet Steel Co.; Bolton, Bulley & Co.; Bay State Iron Co.; St. Alban's Iron and Steel Works.

Steel Works.

The case will be continued on Thursday Remonstrances against the extension have been received from Pittsburgh, Cincinnati, Harrisburgh, Pa., Youngstown, Ohio.

Activity Among the Ironworkers of San Francisco.

All the machine shops and iron foundries of San Francisco are now working full time. Several of them are compelled to keep run-ning overtime. The principal manufacturor report that the iron business is more prosperous at present than at any time for the past ten years. The bulk of the business appertains to the manufacture of mining machinery. One firm is constructing a 10-stamp mill, angines with 10-20 inch explicitors. 2 engines, with 10 x 20 inch cylinders; 6 amalgamating pans, with boilers and settlers for, Mexico. It is also making a 20-stamp mill, Mexico. It is also making a 20-stamp mill, a Corliss engine, with 18 x 42-inch cylinders; four boilers, 54 inches by 16 feet, with pans and settlers, for the Hastings Company of of Arizona; a 20-stamp mill for the Total Wreck Company of Arizona; a Corliss engine, with cylinders 20 x 48 inches, 4 boilers 4½ x 16 feet, 14 5-foot amalgamating pans, 7 8-foot settlers, shafting, &c. For the Santa Marie mines of Mexico it is building a 60-stamp mill, two Corliss engines, with cylinders 24 x 48 inches, 6 boilers 4½ x 16 feet, 36 5-foot amalgamating pans, 18 5-foot were then tested for ultimate tensile resistsettlers and 4 rock breakers, with shafting ance; the unannealed ones giving an averand everything necessary for the plant. It is also building a boiler for the steamship tion, whereas the average of the annealed Empire, 12 feet in the clear. The firm's orones was 65,678 pounds per square inch of just rendered in the splayed hoop iron case:

TREASURY DEPARTMENT,
OPTICE OF THE SECRETARY,
WASHINGTON, D. C., April 13, 1882.

Collector of Oustoms, New York.—Sin: The
Department is in receipt of your letter of the
17th ult., submitting the appeal (No. 9972 G)
of John S. Leng from your assessment of duty
at the rate of 1½ cents per pound on certain
hoop iron imported by him per Republic,
January 3, 1882. The merchandise is hoop
iron cut to specific lengths for barrel hoops,
punched at one end, and is splayed to fit the
parts of the barrel for which it is intended. for smelting copper, in which branch of business it reports more activity than at any time before. A third firm has 400 men employed, who earn on an average \$3 a day. A fourth firm employs from 400 to 600 men, the merchandise differs in no respect from the hoop iron cut and punched, which, by Decision 4496, is held to be dutiable as hoop iron. The article, as imported, not being a complete hoop, it comes within the principles of the decision cited, and is to be regarded as hoop iron. Your decision is therefore attempting the firmed. Yery respectfully.

ployed, who earn on an average \$3 a day. A fourth firm employs from 400 to 600 men, and pays \$45,000, and sometimes more, a month in wages. It has large orders on hand for mining and ship machinery, for sugar works and steamboat boilers in the Hawaiian Islands. All its shops, the superintendent states, are running full time, and it is extending its business facilities having to is extending its business facilities, having re-cently expended \$100,000 on workshop extensions. Altogether there are about 1900 men employed in the metal works of the city, earning from \$2 to \$4.50 a day, or an average

A number of warrants are out for the The Secretary of the Treasury has the forged axle case now before him and will prepare his decision in a few days.

All the

Structural Steels .- III.

BY ALBERT F. HILL, C. E.

INFLUENCE OF MECHANICAL TREATMENT.

Of even greater importance to the engineer than the knowledge of the effects of chemical composition, is the knowledge of the effects produced upon steel by different forms of mechanical treatment, such as hammering, punching, shearing, annealing, tempering, &c. The effects of such treatment are, in most cases, so decisive in their influence upon the mechanical properties of the material, as to completely controvert the conclusions and expectations based upon chemical analysis; that is, if, for instance, this latter, or even actual physical tests, have shown us, that we have a mild steel of great ductility to deal with—subsequent shop manipulation may change it into a hard, brittle and unfit material for construction, and vice versa-mechanical treatment may be successfully called to our aid in correcting certain undesirable properties due either to chemical composition or to previous mechani-cal treatment. This also enables us to meet most readily certain peculiar requirements of steel construction, and puts into our hands the means of equalizing the service of differ-

INFLUENCE OF ANNEALING.

The operation of annealing is, of all forms of mechanical treatment, the one of greatest importance to the engineer. Its effects are marked by a reduction of the elastic limit and ultimate strength, and an increase in the ductility of the steel. In this way we can, therefore, counteract the effects of local hardening, caused by punching, cold-ham-mering, &c. Annealing also enables us to make use, in construction, of steel otherwise too high in carbon, by increasing its ductility to the required standard. Tests made by the writer and contained in the following, Table VII, show the effects of annealing on steel bars. The test pieces—30 inches long, leaving 12 inches clear between jaws of testing machine—were cut from both ends of bars, which were subsequently made into eye-bars. As it was desirable to find out how much of the loss in strength of the manu-factured eye-bar, as compared with the origfactured eye-bar, as compared with the original bar, was due to annealing after forming the eyes, and how much of it was due to this process of making the eyes, alternate test pieces were annealed in the same manner as were subsequently the eye-bars, viz., heated slowly to a dark red heat and then quickly covered with fine ashes so as to prevent too rapid or unequal cooling. prevent too rapid or unequal cooling :

TABLE VII,-" OPEN-HEARTH" STEEL BARS, DE SIGNED FOR EYE-BARS, AWNEALED AND UNAN-

0.50	0.40	0.30	Carbon.				Carbon		bon.
3 x% in. {	3%x%1n. {	3½x% in. {	Size.						
e e	ם ב	00		Ma	rk,				
65,904	59,893	55,635	Un	Elastic limit.	Average resistan five ten ces, in per sq. at—				
112,630	109,750	95,390	Unannealed	Rup- ture.	test pie- in lbs.,				
IO.I	12.9	14.3		Average	percentage of stretch.				
54,354	52,987	50,235	Λ	Elastic limit.	Average resiste five t cess, per s				
100,520	94,460	90,600	Annealed.	Rup- ture.	verage tensile resistance of flve test pie- ces, in lbs., per sq. inch, at—				
13.5	15.4	19.3		Average	percentage of stretch.				

The effects of shearing, punching and hammering of steel, as will be herafter more fully shown, are marked by an increase in the hardness of the material extending over a more or less well-defined area, immediately surrounding the points at which these operations were very under the elec-

strength than the unannealed—the differen between the two extremes in the one being 10,832 pounds, as against 18,744 pounds in the other. It is to be regretted that no tests were made to ascertain the original strength of the plates, so as to furnish an indicati of the plates, so as to furnish an indication of the amount of deterioration due to the punching, and the amount of restoration effected by subsequent annealing. Neither do the tests give an analysis of the steel nor a statement of its mode of manufacture.

Size of	Tensile breaking strain per sq. in.		
test piece.	Annealed.	Unannealed	
2.28x.475 2.28x.475 2.33x.475 2.18x.475 2.18x.470 2.23x.480 2.23x.470 2.23x.480 3.23x.475 2.25x.475 3.23x.475 3.23x.475 3.23x.475	66,020 59,962 69,848 70,794 61,448 62,536	38,780 52,738 44,920 45,55æ 37,770 36,010 33,994 48,78a	
	2.28X.475 2.28X.475 2.32X.475 2.33X.470 2.23X.475 2.18X.470 2.23X.480 2.23X.480 2.23X.480 2.23X.485 2.23X.485 2.23X.475 2.23X.485 2.23X.475 2.23X.475 2.23X.475 2.23X.475 2.23X.475	Size of test piece. 2.28X.475 2.28X.475 3.33X.470 3.23X.470 3.23X.470 3.23X.480 2.23X.480 2.23X.475 2.23X.475 2.23X.475 2.23X.475 2.23X.475 2.23X.475	

Transaction Inst, of Naval Archts.

Table IX gives the results of a series of 75 tests made of open hearth steel plates of different carbon percentages. The original plates were throughout of 3/4 inch thickness and 18 inches in width. All the specimens were cut out crosswise to the direction of rolling, simply on account of greater convenience in handling, and as long as they were all taken in the same direction, the di rection to the rolling could have no influen on the comparison of the results. Size specimens in clear between jaws of testing machine, 3/8 x 2 x 12 inches.

TABLE IX .-- ANNEALING EFFECTS ON SHEARED AND HAMMERED O. H. STEEL PLATES.

, per cent	Treatment of test pieces.	Average tensile re sistance of 5 test pieces in lbs. per square inch of section at		
Carbon,		Elastic Limit.	Rupture.	Pelor
	Specimens cut in planer	45,170	86,720	19.1
	out Specimens sheared	31,290	69,376	11.3
	out and annealed Specimens hammer'd	44,830	84,950	20.2
. 30	cold, then cut out in planer Specimens as above	63,720	85,380	3 4
3-	and annealed	46,360	82,970	16.8
.40	Cut in planer	53,640	89,880	16.4
.40	Sheared out	41,250	75,400	8.3
	annealed Hammered cold, then	51,470	86,320	16.7
	cut out in planer Hammered, anneal'd,	64,180	87,560	2.3
	then cut in planer	51,710	85,890	14.1
. 50	Cut in planer	62,070	93,210	21.4
	Sheared out	49,960	82,930	5.2
. 50	Annealed	59,390	92,560	12.0
-	in planer Hammered cold, then annealed and cut in	71,630	91,810	0.7
	planer	65,120	90,620	8. x

While there is no doubt of the beneficial results obtainable from careful annealing, it must be conceded on the other hand that this treatment is liable to do more mischief than good, unless properly performed. Great care must be exercised in the heating, in order to prevent oxidation or partial decarburization.
It ought, whenever possible, to be performed in a gas furnace, so as to avoid all actual contact with the fuel itself, and at a temperature higher than that at which the steel has been previously worked. This will, in most cases, be accomplished by a temperature not much higher than is required for heating to cherry-red. The cooling ought to be as slow as possible, and contact with the air avoided. All these conditions would require for their strict fulfillment, in the ann for their strict runniment, in the annealing of large masses, such an extension of plant and labor as to materially affect the cost of the steel. The main question to be solved is the construction of a suitable annealing furthe construction of a suitable annealing fur-nace, capable of receiving the long pieces, such as eye-bars, &c. The cooling need not necessarily be done in a close chamber, as steel after being heated can be taken out and quickly covered with dry sand or lime, which will answer all purposes. Collecting opinions on the Clyde and in England, it was found that for whire plates the same steel in one yard for ship plates the same steel in one yard, simply heated to a black-heat, and in the other yard to a cherry-red, was reported to yield the same result; and that, therefore, a low temperature—say of molten lead—would be sufficient for all purposes. The expense of a lead bath, involving scarcely any consumption of that metal, would be only a trifling increase to a plant, the more so since the heat communicated by molten lead is instantaneous, and limited to an unvary ing temperature, while a coal furnace is less certain and much slower. Mr. E. Ede, certain and much slower. Mr. E. Ede, though, who has large experience with this metallic bath—E. Ede's "Management of steel, &c." says he experienced ill effects from meta! heated to this temperature, and woids having recourse to it except in cases of necessity. Experimental demonstration of the effects in annealing of various temperatures, more or less rapidly applied, and under different conditions of cooling. re very much needed on this subject.

tions were performed, thus raising the elastic limit in these places and impairing the homogeneity of the material. The great corrective of these bad effects is annealing.

In a series of experiments conducted at Chatham a few years ago, eight plates %-tinch thick were taken, and four holes %-tinch diameter were punched in each. The plates were then cut in two, so that each plates were then cut in two, so that each plate made two test pieces, one only of which was annealed. The whole sixteen pieces were then tested for ultimeter twells and we soon find that the weld-leged to infringe the patents owned by the weight of the material of the most serious obstacles that confront us in the adoption of steel for purposes of bridge and other construction, is the distrust of its welding capacity. That this distrust is founded far more upon prejudice than upon fact is becoming more and more inch diameter were punched in each. The plates were then cut in two, so that each difference in the methods of working iron and steel. Again the "carbon line" becomes our guide, and we soon find that the weld-leged to infringe the patents owned by the work of the most serious obstacles that the machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the frame is a specimen wringer machine, marked 'America' on the first plane is a specimen wringer machine, machine, machine, machine, machine, machine, mac ability of steel is in inverse ratio to the carbon percentage—that is, the facility with which steel may be welded to steel, dimin-ishes as the metal approximates to cast iron Empire, 12 feet in the clear. The firm's orders at present awaiting execution amount to \$250,000. This firm employs 300 operatives and disburses \$20,000 a month in wages.

Another firm employs 250 men, sometimes centage of any that can ever be used in construction, have been successfully welded by proper treatment.

At the Philadelphia Exhibition, the Swedish Sandvik Company showed a series of steels

turnin	g to	ol 1.10.	welded	to steel	containing	0.30
file cor			0.0	8.6	**	0.30
borer	0.6	0.75	0.6	6.6	4.6	0.40
chisel	0.6	0.70	44	4 p	8.0	0.50
bar	6.6	1.10.	0.0	6.6	6.6	1.10
EFERT.	8.0	1.00,	0.0	6.6	6.6	1.00
44	6.6	0.90,	6.6	6 a	8.6	0.00
68	6.6	0.80,	0.0	6.6	4.6	0.80

These steels were of the welded pieces being pol at the works, and the welded pieces being pol at the place of welding, showed in every ished at the place of welding, showed in every case that the union was perfect.

From a paper read before the Liverpool meeting of the Iron and Steel Institute, 1879, by Mr. Ratliffe, of the Mersey Steel Works, we learn that he has successful.

by Mr. Rathine, of the Mersey Steel Works, we learn that he has succeeded in welding mild Bessemer steel forgings, without any flux, in the same way as ordinary iron. This metal before welding showed to analy-

sis:	_		_										0	,																		
Carbon				0	0		0	0 1					0	0	0.							0	0	0	0	0.1	0 0	0.1			15	3
Phosphorus.				٠		D	a		, ,	0.1	- 0			0	,0.			0 1			0	0	0	0	D	0	0	0	0		60	9
Silicon		0 1			0	0	0	0.1		0 1		 		0	0	0	0	0 1	0 1	 0	0	۰		0	9	0	0	0	0	۰	03	0

the bar 3½ inch diameter was severely punished under a 5-ton hammer, and only broke with the twenty-ninth blow, showing no weakness where the welding had taken

Experiments have proved that steels hav-ing approximately the following composition,

- CACC COMMAN	3		•																					
																					E	36	er e	cent.
Carbon	9 1		, 0								0	0	0	٠				۰	٠		0.18	3	to	0.30
ulphur hosphorus				۰		٠	0	۰		٥	0				0					1	0.0	3	to	0.0 /6
ilicon																								
danganese		. ,		,	*				, ,			×						ì	ì		0.25	5	to	0.40
FIRST .																								

This composition is exactly suited to ten-

sion members in structures.

In further illustration of the capability of mild steel for being welded, Kern states—Chemical News—that to steel ship plate 2 feet wide x ½-inch thick; a steel plate, 2 x 2 x ½ inches, was easily welded and a good joint was received. In control of the stripes joint was received. In another steel, strips 6 x 4 x 1/4 inches, containing 0.25 to 0.26 per cent. carbon were welded together; very often after cooling the plate was bent double, through the weld, without the least fracture in or near the welded part.

To prevent decarburization and to render

the welding places perfectly clean, various welding powders have been recommended, welding powders have been recommended, but have never come largely into use—for, after all, a good and clean weld, be it in iron or steel, depends upon the skill and the intelligence of the blacksmith. Unfortunately the latter is only too often dogmatic and obstinate; "knows all about steel," and therefore cannot be taught anything. If the steelmaker has furnished the constructing engineer with otherwise good steel, that, somehow or other, "will not weld," the latter will probably discover the source of the trouble in the blacksmith shop. Lieutenant will probably discover the source of the trouble in the blacksmith shop. Lieutenant Barba, in his book on "The Use of Steel," relates a characteristic incident in his experience during the construction of the steel ships before referred to, which is quite in point. The blacksmiths intrusted with the work of bending steel plates and angles wanted to treat them like ordinary iron, and persistently violated instructions. After several cases of rupture had been observed, these men were replaced by carpenters. these men were replaced by carpenters, inexperienced in taking care of a fire, and, not "knowing all about it," were therefore disposed to pay the closest attention to the instructions received. They completely succeeded without a single failure, and there was an end to "the trouble with the steel."

steel."

There is one point in welding steel which cannot be too strongly insisted upon, and that is that the pieces, after having been brought to welding point, should not be struck heavily with the hammer, but only tapped lightly at first, until they have begun to weld; after that the sledge or steam hammer have been distributed by the statement of the sledge of steam hammer have been distributed by the statement of the sledge of steam hammer have been steam hammer have been steam that the sledge of steam hammer have been steam had bee hammer may be used with perfect freedom.

The Threatened Wringer Infringement Suits.

Under the heading of "Infringement Suits Against Dealers," in our last issue, we made the mistake of giving the injunction obtained from Judge Wallace by F. F. Adams & Co. against the Wringer Combination a somewhat wider scope than its wording warrants. The respondents were not restreated from The respondents were not restrained from suing any one they may choose to consider a party to the alleged infringement of their patents, whether in the manufacture or sale of such infringement. In other respects our statements were correct. The injunction provides in effect as follows: "It is hereby ordered that an injunction may issue against said respondents and each of them, restraining them and each of them, their agents, servants and attorneys from issuing by mail, or publishing in any manner, or handing, or delivering to the public or any private individual, the circular complained of and set forth in said bill, or any colorable of and set forth in said bill, or any colorable form thereof, intimating or threatening the public, or any private individual, or firm, or combination of individuals against the use or sale of the clothes wringer described in said circular, and marked and known as the 'American,' until the further order of this Court. This injunction is granted on condition that the complainant, F. F. Adams & Co., Limited, stipulate that a certain wringer machine, marked 'America' on the frame " " is a specimen wringer machine, manufactured and sold by these

combination, with a view to making it as easy as possible for the combination to sue them without the necessity of obtaining proof of the alleged infringement through or from the dealers. Our favorable comment circulation of printed threats to sue dealers for infringing their patents. We think the position taken on this point is evidently a just one, as menacing of dealers has been carried too far in a great many cases, and often by people who had no intention of bringing suits, but merely wished to injure the trade of a competitor. We understand, nowever, that no court has the right to en-join any one from bringing a suit against any other person whom he may have a legal right to sue, and in stating that Judge Wallace had so decided, we inadvertently made a mistake. The representatives of the wringer combination have already begun two suits against F. Adams & Co., and will, we presume, press them to a decision. will, we presume, press them to a decision. Messrs. F. F. Adams & Co. are certainly in fighting mood, and have done all they could to invite the Wringer Combination to attack them and to defend their customers from annoyance. They announce that they have what they consider a perfectly good defense, and as they are abundantly responsible, we presume the Wringer Combination will con-test the issue with them and not with dealers.

would be rendered available for agricultural and other purposes. The engineers in charge of this work have been engaged for ten years past in preparing the plans, and the total cost is now estimated at not less than \$46,000,000. The dyke will be about 24½ miles in length, and will extend from the city of Enkhuisen to the coast of the province of Overyssel. The top of the dyke will be built to the hight of 16 feet above the level of the apa, which will bring it about 6½ feet above the highest tide. The dyke will be formed from sand and faced with clay, and will be built of sufficient dimensions to resist the heaviest seas. It is intended to commence operations on the work at four different points, and the calculation is to have it com-sted in from seven to ten years.

Special Notices E. BISSELL & CO., AUCTIONEERS.

THURSDAY & FRIDAY, April 27th and 28th,

At 10 A. M.,

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SPECIAL SALE OF

Hardware, Cutlery, Housefurnishing Goods, &c.

Comprising a general assortment of SHELF HARDWARE, EDGE TOOLS, SHOVELS AND SPADES, &c.

Also four cases first-quality Fish Lines. Also 500 lots Stamped, Tinned and Enameled Ware, direct from the factory, comprising a full and desirable assortment. Also a desirable line of Foreign and American Pocket and Table Cutlery.

For Sale.

Two Traveling Cranes, so-ton capacity. Also, nch Lathe Patterns, 18 feet bed. A lot of e Chucks from 18 inch to 28 inch, new; also con Hanger Patterns from 1 inch to 4 inch, com-late.

JOSEPH LUMLEY, 144 N. 3d St., Philadelphia, Pa.

For Sale.

Hardware Business, Stock and Fixtures for sale well established stand; doing good busines HARDWARE. 1403 Ridge Avenue, Philadelphia, Pa.

For Sale.

A well-established, growing Hardware and Stov business at Hot Springs, Ark. Clean stock. LOCK BOX 415. Little Rock, Ark.

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An American of middle age, with a long busing An American of middle age, with a long business experience in Foreign countries, is making up a voyage to the East Indies, Australia, New Zealand and Cape Colonies, Africa, and will take a sample line of American hardware, machinery and specialties, if a sufficient number of responsible houses apply. Solid references given.

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Superintendent Wanted.

A practically experienced and reliable person, to take charge of Hematite Mines, worked in levels and on surface. Address, giving full par-ticulars as to age and experience, and where for-merly operating,

STEEL CO. OF CANADA, Londonderry, Nova Scotia.

Wanted.

By a Manufacturing and Importing House of Cutlery, a Salesman on commission for each Southern and Western Trade.

Address J. G. A.
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Situation Wanted

By a man, aged 32, of several years' experience in all the details of a Morchant-Bar and Sheet Mill, as Assistant Manager, Stocktaker, Time keeper or Shipper. Good references. Five years in last situation. Apply to C. F.,
P. O. Box 105, Acadia Iron Mines,
Londonderry, Nova Scotia.

Wanted.

Thoroughly competent Merchant Roller for 16 and r8-inch Trains. Apply to TOOKE STRAKER, Manager

Boonton Rolling Mills Boonton, N. J.

WANTED.—A position as Hammerman, by a man experienced in all kinds of Locomotive, Marine and General Forgings in Steel. Address F. TINDEL, Frankford, Philadelphia, Pa.

Wanted.

A Partner with \$5000 to \$10,000 in a Foundry and ss, established in 1824. For par-Machine Business, ticulars, inquire of

I. H. COLLER, Poughkeepsie, N. Y.

Wanted.

All manufacturers to know that the HOLT MANUFACTURING CO., of Cleveland, Ohio, will, on and after April 1, sell the celebrated HOLT PORTABLE FORUSE from 210 upward. After thirteen years' experience in the Forge business, they think best to discontinue the agent system and sell direct to consumer. Write for circular of particulars and photographs of machines.

Address HOLT MANUFACTURING CO., Cleveland, Ohio.

DRILL PRESS FOR SALE—A new Upright Power Driti Press, swings ze inches, back geared, quick return motion, steel spindle and shaft superior apish; weight, 110; high, o feet, price. \$210.
PRESCLESS PUNCH AND SHEAR CO., 114 W. Liberty St., New York.

A MAN of twenty-six, fully competent, desires a situation in the Hardware trade. Would travel. Have had full charge of a large retail store,

IRVIN BESSE, Peabody, Mass.

Special Notices.

New Iron Working Machinery.

ENGINE LATHES. ENGINE LATHES.

One 25 in. swing (gap). 14-foot bed. (English make). Swings in gap 45 x 6 in. wide. On hand.

Two 35 in. swing, triple-geared (bod made to suit). Fitchburg June delivery.
One 24 in. swing x 14 ft. bed. Fitchburg. Apr. del'ry. Foot 20 in. x 12 x 14 ft. bed. Fitchburg. April and May delivery.

Two 19 in. x 10 x 12 ft. bed. Gray. April delivery.
Two 19 in. x 10 x 12 ft. bed. Gray. April delivery.
Two 15 in. x 10 ft. bed. Fitchburg. On hand.
Two 15 in. x 10 ft. bed. Blair. On hand.
Two 15 in. x 16 ft. bed. Blair.

PLANERS.

One 36 in. x 36 in. x 12 ft. Wiles On hand.
One 25 in. x 35 in. x 3 ft. Fitchburg. April delivery.
One 35 in. x 35 in. x 3 ft. Fitchburg. April delivery.
One 30 in. x 30 in. x 10 ft. Hewes & Philips.
One 30 x 30 x 3 ft. Fitchburg. On hand.
One 30 x 30 x 3 ft. Fitchburg. On hand.
One 18 x 18 x 4 ft. Gould. On hand.
One No. 1. 12 in. stroke shaper. Fitchburg. Apr. del'ry.
Two No. 0, 10 in. stroke shaper. Fitchburg. June del.

PLANERS.

DRILL PRESSES.

to 50 in. radial drill (extra heavy) double-geared, self-feed, radial arm raises and lowers by power, planed and slotted bed-plate with portable table. First-class English make. Weight, 4 tons. April delivery. First-class English make, Weight, 4 tons. April delivery. One så in. radial drill, self-feed, double gearing and slotted and planed bed. Betts Machine Co. On Hd. Two 29 in. swing, back-geared Prentice. Two 25 in. swing, back-geared. Pitchburg. On hand. Three 18 in. swing. Fitchburg. On hand.

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A first-class flourishing RETAIL HARDWARE BUSINESS, with a carefully selected stock of Mechanics 'Tools, Bulders' and Cabinet Hardware, in Jersey City, now rapidly growing. Stock \$5000. Inquire of H. LUTTGEN,

For Sale.

Palo Alto Rolling Mills,

Near Pottsville, Pa., ON THE MAIN LINE OF THE POTTSVILLE

AND READING PAILROAD

These mills are in good repair, and can be started in two days' time.
Rolls for T-Rails 12 to 70 lbs. per yard, and for Street Rails 18 to 70 lbs. per yard, and for Street Rails 18 to 70 lbs. per yard.
Guide Mill Train for Merchant Iron 1/4 to 1 inch.
Rolls for Merchant Bar. round and square, up to 1/4 inches.

436 inches.

Number of Puddling Furnaces in both mills, 30; Heating Furnaces, 9; all with boilers attached. Also Foundry, Machine Shop, Blacksmith Shops, Iron House, Roll House, Carpenter and Pattern Shops, Stables, handsome Dwelling for Superintendent, 12 Tennent Houses, a Brick Office, and ample grounds for stock and cinder.

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One 20-in. Power Drill Press. Three 20-in. Pavis.
Power Drill Presses. Six Hand Blacksmith Drills.
Three Gear Cutting Attachments for Lathes.
Twelve Assorted Chucks. 4 in. to 18 in. One Bolt Outter, 14 in. to 16 in. Three Barnes Lathes. Six Hand Shearing and Punching Machines. Two Sturtevant Blowers. Also, one second-hand Horizontal Engine, 12 x 24. One second-hand Horizontal Engine 12 x 16.

16 and 18 S. Howard S., Baltimore.

For Sale.

One pair good, sound CHILLED ROLLS, as in. x so in., made by A. Garrison & Co., Pittaburgh. No use for them.
Also a HEATER, 18 in. x so in., with at s-inch tubes. Been used some. Will sell cheap, CHAS. HUSTON & SONS, Coatesville. Chester County, Pa.

For Sale.

One Burdick Header, Small Forged Bolts,

ond-hand.
Two Lowell Forged Headers.
One Heavy Tire Blank Upsetter, very strong,
Chapin Maker; Head % x 6 in., open dies.
One Double Funch and Sbears, Allstatter No. 7,

One Double Punch and Shears, Allstatter No. 7, second-hand.
One Geared Cam Press, Table 24 x 13 in., used for cutting out Paper Collars.
Two Key Seat Cutters, Screw and Nut Feed.
One Double-Bolt Cutter, Smith maker, little used.
Also our full line of National Machinery Co.'s manufactures: Hot-pressed and Hot-forged Nut Machines: Bolt Cutters, National Head, 8 sizes; Double-Bolt Cutters, Tappers, Headers, Washers.
Rivet. Track Bolt, Pointers, Burrers, and full outflist for Bolt and Nut manufacturers. Address NATIONAL MACHINERY CO., Cleveland, Ohio, the only Specialists in the United States.

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Present output about five cars daily. Either personal interview, or full particulars may be obtained, by addressing the owner, X. Y. Z., Office of The Iron Age, 83 Reade St., New York.

For Sale.

Two Corliss Condensing

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Industrial Exposition,

1882. Opens September 6,

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In the Grandest Exposition Buildings in th United States. Exhibitors from every State in

The Great National Exhibition of

ART AND INDUSTRY.

No charges for space or steam power. Special arrangements made for transportation of exhibits and visitors. For full particulars address

FOR SALE OR TO RENT. New, light Factory; 70,000 floor feet; 275 H.

P. Cortiss Engine, giving power at minimum

Shafting, piping, elevator, &c., all complete and modern. Lowest insurance rates. Railroad siding and ample yard room. Immediate posses

A large quantity of General and Specie Machinery at low prices. SHARPE RIFLE COMPANY,

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A Hardware Manufactory, at Westville, Conn., consisting of Foundry, Machine Shop, Storehouse and other buildings; also Water Power, Engine, Solier, Patterns, Tools and Eachinery used in the same.

Address
THE BLAKE HARDWARE CO., New Haven, Cons.

For Sale.

Horizontal Engines, 18 x 30 inch, slide valve; also 16 x 42 (Howes & Phillips), with cut-off; 16 x 36 (Currier), with cut-off; 16 x 28 Upright Engine, with cut-off; 0 ne 36 H. P. Locomotive Boiler; one 4-ton "Otis" Freight Elevator; No. 5 Knowles Steam Pump. All the above guaranteed complete and in perfect order. For perticulars address BELCHER & BAGNALL, 40 Cortlandt St., N. Y.

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Stock of hardware, stoves and implements, and store furniture, in one of the best towns in Kansas.

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One Lathe, 1s ft. bed, 24 in. swing, screw cutting, triple gear, compound rest, with cross-feed.
One Lathe, 20 ft. bed, 55 in. swing, back gear, westerned rest, cross and angular feed.
One had be, 10 ft. bed, 50 in. swing, back geared.
These Tools are in use, and can be seen at our

THE STILES & PARKER PRESS CO., Middletown, Com

Manufacturing Property for Sale.

The Real Estate of the late Foundry and Machine Company of Taunton, Mass. Buildings consist of Foundry, Machine, Erecting and Blacksmith Shops, and covering about 60,000 square feet of ground. For particulars apply to

For Sale.

ORANGE CO. FURNACE, Middletown, N. Y.

TOR SALE.—A well-selected stock of HARDWARE, with Fixtures and Good Will, In
Anamosa, county seas of Jones County, Iowa.
Population 3000. One of the prettiest and most
thriving little cities in the West, having Water
Works, Telephone Exchange in city and with cities
in vicinity. Situated on the two best Railroads in
the West; easy competition; business established
so years. Good reasons for selling. Address
BOX 73,
Anamosa, Iowa.

For Sale.

Nine inch Merchant Mill and 56 Rolls.
Lever Shears for cutting railroad iron.
Lever Shears for cutting 2 inch x 2 inch.
Lever Shears for cutting 3½-inch plate.
Nut Punch, very heavy.
Puncy, Jones & Oo. Shear, cuts 8 inch x 1 inch.
Horizontal Engines, 10 x 16, 10 x 18, 11 x 20,
2 x 20, 14 x 20.

A. G. BROOKS & WINEBRENER, a61 North 3d St., Philadelphia

Beam Engines,

32 in. x 72 in. cylinders. Address,
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WANTED.—A young man wants a position in
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Special Notices.

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MACHINERY.

APRIL 20, 1882.

The following new and improved Machinists' Tool re part of what we have for April delivery. are part of what we have for April desivery.

36 in. x 57 in. x 67f. Pron Planer. 3d hand. April.

20 in. x 30 in. x 5 ff. Planers. New April.

20 in. x 30 in. x 5 ff. Planers. New April.

22 in. x sung, 1; 7f. be.6. Engine Lattics. April.

22 in. x str. ff. Engine Lattics. April.

23 in. swing, 15f. bed. Engine Lattics. April.

34 in. swing, 15f. bed. Engine Lattics. April.

35 in. swing, 5ff. bed. Engine Lattics. April.

29 in. Shaper, New April.

11 in. Shaper, New April.

The following on hand:

29 in. Shaper. New. April.
11 in. Shaper, 25 in. Traverse. April.
12 in. Swing, 15 ft. bed Engine Lathe. New.
12 in. swing, 15 ft. bed Engine Lathe. New.
13 in. swing, 15 ft. bed Engine Lathe. New.
13 in. swing, 15 ft. bed Engine Lathe. New.
14 in. swing, 15 ft. bed Engine Lathe. New.
15 in. swing, 16 ft. bed, Engine Lathe. New.
17 in. swing, 16 ft. bed, Engine Lathe. New.
18 in. swing, 16 ft. bed, Engine Lathe. New.
19 in. swing, 16 ft. bed, Engine Lathe. New.
19 in. swing, 16 ft. bed, Engine Lathe. New.
11 in. swing, 16 ft. bed, Engine Lathe. New.
12 in. swing, 16 ft. bed, Hand Lathe. New.
13 in. swing, 16 ft. bed, Hand Lathes. New.
15 in. swing, 16 ft. bed, Hand Lathes. New.
16 in. swing, 16 ft. bed, Hand Lathes. New.
17 in. swing, 16 ft. bed, Hand Lathes. New.
18 oin. swing, 16 ft. bed, 16 ft. swing,
18 cound Arbor Fox Lathe. Fine order.
18 in. swing Lathe, 16 ft. bed, 16 ft. swing,
18 in. swing Lathe, 16 ft. from Planer. 2d hand.
19 in. xwing Engine Drills. New.
29 in. swing Upright Drills. R. G. & S. F. New.
29 in. swing Upright Drills. R. G. & S. F. New.
29 in. swing Upright Drills. R. G. & S. F. New.
29 in. swing Upright Drills. R. G. & S. F. New.
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29 in. swing Upright Drills. R. G. & S. F. New.
20 in. swing Upright Drills. R. G. & S. F. New.
21 spindle Drill. New.
29 in. swing Upright Drills. R. G. & S. F. New.
21 spindle Drill. New.
21 spindle Drills. Reavy. Swing.
22 wall Drills. Reavy. Swing.
23 wall Drills. Reavy. Swing.
24 wall Drills. Reavy. Swing.
25 wall Drills. Reavy. Swing.
26 wall Swings Machine. Swings Wall.
27 hond's Double Milling Machine. Swings Wall.
28 wall Drills. Reavy. Swing.
28 wall Drills. Reavy. Swing.
29 wall Drills. Reavy. Swing.
29 wall Drills. Reavy. Swings.
29 wall Drills. Reavy. Swings.
29 wall Drills. Reavy. Swings.
20 wall. Swings. Swing

Lot of Forges, I Band Saw, I Slat Tenoner, I Railway Saw Bench, I Foot-power Circular Saw. Cold rolled Shafting, Pulleys, Hangers, Couplings, &c., always in store. The George Place Machinery Agency,

New York. J. SEIDEL,

121 Chambers and 103 Reads Sts.,

Commission Merchant,

Box 663, Habana, Cuba.

Will be happy to accept the representation e first-class houses manufacturing hardware.

Reference :

COLLINS & CO., sis Water Street, New York,

For Sale.

The Industrial Works of Shamokin, ewned and successfully carried on for a number of years by the late Win. Brewn, deceased, connisting of Foundry and Machine Shop, and a large stack of Paterns regarded as part of the property. Boller Shop, Blacksmith Shop and Factory for the manufacture of heavy coal screens. Well located in the borough of Shamokin, Pa., with the best facilities for shipping by rail, and surrounded by a district contributing all the work that a shop of that kind can possibly turn ost. The works are now running, but in a very short time possession can be given. Easy terms of payment are offered to suit a purchaser of limited capital.

Offered for sale by WM. McILVAIN & SONS, Reading, Pa.

For Sale.

The largest stock of New and Second-hand Engines, Boilers, and general Machinery in the West. Send for Catalogue. Hoisting Outfits for Coal Mining and other purposes a specialty.

WARREN SPRINGER,

105 to 210 South Canal St., Chicago.

FOR SALE LOW.—ENGINE.

A Vertical High-Pressure Steam Engine, com plete. Cylinder, 24 in. by 48 in. Built by A. J. Sweeney & Son. Can be seen in daily use at our LA BELLE IRON WORKS,

Wheeling, West Va.

DESIRABLE MANUFACTURING SITE For Sale or Rent.

Being the extensive property formerly occupied by the BUFFALO IRON AND WAIL WORKS AT BLACK BOCK, IN THIS CITY.

The buildings cover over three acres, and are of brick and wood, substantially constructed, and with slate roofs. They could easily be changed, if necessary, te suit almost any kind of business.

Water and railroad communication to all parts of the country.

Maps of the property, with full description, sent on application.
P. P. PRATT or F. L. PRATT,
Buffalo, N. Y.

For Sale - - Rolls.

38 Rolls for I Beams. THREE-HIGH STYLE.

For particulars address CINCINNATI ROLLING MILL CO., Cincinnati, Ohio.

Presses for Sale.

Three small Power Punching Presses, in first-class order. They have heavy fiv-wheels; two are 13 in. dlam., and one 16 in. Price \$6, each (cost \$150). Also two large new Punching Presses; weight, 1200 each; box frame style; hight, 5 feet; throat, 6 inches; opening in bed, 5 x 8; halance wheel, 30 x 35c, weighing about 300 pounds.

PERRILES PUNCH AND SHEAR CO., 175 W. Liberty St., New York.

Special Notices.

JOB LOT.

ELEY BROTHERS'

GENUINE BLUE CARTRIDGE CASES. Twelve Gauge.

The best paper shell in the market. For sale cheap. Supply limited.

ALFRED FIELD & CO.,

93 Chambers St., N. Y.

Notice to Manufacturers of CAST-IRON WATER PIPE.

Sealed proposals will be received at the office of the Eoard of Water Commissioners, City Hall, Hoboken, N. J., until 8 o'clock p. m. Thursday, April 37, 1882, for furnishing the following Cast-Iron Water Pipe and the necessary Castings:

Four thousand three hundred and fifty (4350) feet of sixteen (16) linch.

Two thousand seven hundred (2700) feet of twelve (12) linch, and the required Branches, Bends, &c. To be made of a zood quality of iron. The pipes to be cast vertically, bell-end down; tested and inspected under a hydraulic pressure of three hundred (300) pounds to the square inch. To be free from defects of all description; to be conted with tar while hot inside and out. The pipes to weigh on an average as follows: The sixteen inch, one hundred and twenty-five (125) pounds to the lineal foot; the twelve inch, seventy-five (75) pounds to the lineal foot. The Branches and Castings to be of corresponding strength. The Hub or Socket and the Spigot end of the pipes will be shaped in exact conformity with the drawings which will be furnished. Proposals to be indorsed: Proposals for furnishing Cast-Iron Water Pipe, and directed to the Board of Water Commissioners of the City of Hoboken. The Board reserve the right to reject any or all bids if deemed for the interests of the city so to do.

By order of the Board of Water Commissioners.

M. H. MURPHY, Registrar.

To Railroads, Mill Owners and Contractors.

STRUCTURAL IRON WORK FOR SALE.

Having purchased the Ironwork of the Main Centennial Building, situated in Fairmont Park, Philadelphia, we now offer the same in sections to suit purchasers. These buildings can be sold in widths varying from 100 to 168 feet, and of any hight, from 40 feet down to 25 feet, and in length from 100 to 700 feet. We have eight Spiral Stairways, in all over 800 steps.

Plans showing how all parts of these buildings may be utilized in railroad depots, &c., have been prepared by Messrs. Wilson Bros. & Co., of Philadelphia, civil engineers and architecta, and can be seen at the office of Mackistosh, Hemphill & Co., limited, Fort Pitt Foundry, Pittaburgh, Pa., or at the office of the company, at Centennial Building, West Philadelphia.

Wishing to dispose of the above quickly, we are prepared to offer great inducements to purchasers, both as to low price of material and promptness of delivery. Any communications addressed to the CENTENNIAL STRUCTURAL CO., care of Mackintosh, Hemphill & Co., Limited, will receive prompt attention.

THE NEW ENGLAND Manufacturers & Mechanics' Institute will hold their Second Annual Exhibition a
Boston, in their specially constructed Exhibition
Builting, the largest in the United States, during
SEPTEMBER AND OCTOBER, 1882.
Exhibitors invited from the whole world. Blank
forms of applications for space sent upon application to JOHN F. WOOD, Treasurer,
38 Hawley Street, Boston, Mass.

Copartnership Dissolution.

NOTICE is hereby given that by the death of the junior partner, Mr. Nathan Anthony, the firm of BRADFORD & ANTHONY is this day dissolved.

The affairs of the firm will be settled by the under signed, the sole surviving partner.

Boston, Inneres 1881.

Boston, June 12, 1981.

All communications in regard to the affairs of the late firm should be addressed to BRADFORD & ANTHONY, Boston, Mass. MARTIN L. BRADFORD hereby gives notice that he will continue his business under the name of "BRADFORD & ANTHONY." The estate of the late Nathan Anthon s to be in no way interested in the future business whether con ducted under the name of Bradford & Anthony or otherwise.

otherwise.
All business communications should be addressed to BRADFORD & ANTHONY SA Washington St. Boston, Importers, Manufacturers' Agents and Dealers in Cutlery, Fishing Tackle, Skates.
Soe advertisement first issue cach month.

ROBERT R. HAYDOCK & CO.,

AUCTIONEERS. No. 75 Murray Street, New York,

SOLICIT CONSIGNMENTS OF HARDWARE, CUTLERY, &c.

To Manufacturers or Capitalists. Water Power, with Factory, Foundry and other buildings in the state of Connecticut, all in fine working order and all now occupied. Will be sold to close a copartnership.

This is a rare opportunity, as water power is never failing. For further particulars inquire of F. B. GURNEY,

No. 95 Chambers Street, N. Y.

Notice. A building site will be given to responsible par-ties who understand the business, and will erect. Car Wheel, Maileable or other Iron Works in thriving village. Iron region; superior shipping point; junction four railroads. Citizens and rail-roads desire business. Fortion of capital furnished if desired. For interview address.

Office of The Iron Age, 83 Reade st., New York. THIS is to certify that the partnership hereto-fore existing between R. P. Scott and J. H. Barlow, under the firm name of R. P. Scott & Co., is this day dissolved by limitation and mutual

onsent. Signed this oth day of February, A. D. 188s. Signed R. P. SCUTT. J. H. BARLOW. Copy, by R. P. S. The business formerly conducted at Newark, N. J., will be continued by the SCOTT MANUF CO., Baltimore, Md.

The Sherman Process Co. 9 Pemberton Square, Boston, Mass., Issue Licenses to use the Process for the

Manufacture of Iron and Steel in the Bessemer Converter, Crucible, Stemens-Martin, Puddling, Blast and Cupola Furnaces. The use of this Process improves the quality of the product, saves fuel and labor, and does not re-quire any change in furnace or manner of working See page 17 of The Iron Age of Oct. 25th, 1877.

PUNCHING PRESS AND SHEAR FOR SALE.—A
Boilermaker's Funching Machine, 44-inch throat,
punching 44-inch in 54-inn. Also a Fower Shear, will
inhear 4 plate-iron 4 inches in width. Weight of
ea'h about 5000 pounds. PEERS ESS PUNCH AND
SHEAR CO., 115 W. Liberty Street, New York.

Trade Report.

BRITISH IRON AND METAL MARKETS.

[Special Cable Dispatch to The Iron Age.]

LONDON, WEDNESDAY, April 19, 1882. Scotch Pig.—The market is unsettled and prices are weak. As compared with last the quotations of Carnbros and Eglinton, seize on their opportunity. After the proand 1/ in Glengarnock. The following are to-day's prices for No. 1:

versed, and the market closes unsteady, with prices weak. No. 3, G. M. B, is quoted 43/6, f. o. b., makers' wharves in Tees, less 2½ %. Monday the whole market was weak, and We quote as follows:

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Bessemer Pig.-The market remains in an unsatisfactory condition, and prices are weak and lower. We quote mixtures W. C. Hematites, equal portions Nos. 1, 2 and 3, 55/

Blooms.—There is no change to note, prices continuing weak. We quote Bessemer, 7" x 7", nominally, £5. 5/ @ £5. 10/, f. o. b. shipping ports.

Manufactured Iron.—There is but little demand, and prices are weak. The makers of Sheet Iron have agreed upon a restriction of production of 20 %. Galvanized Sheets have been reduced 10. We reduce our quotations to more nearly represent actual self-

-					20					8.	
Staff.	Ord.	Marked	Bars	1	7	0	0	0	9	10	-
	60	Mediun	n **		7	0	0	0			
	84	Commo	n 44		6	D	0	0			
Hoons	20 W	.G. & ove	er.								
le le		mon Best			8	0	0	0		10	6
86	Medi	um			7	0	0	0	9	5	6
.64	Com	mon			6	EO	0	0	6	25	•
Sheets	. 20 W	7.G. & un	der.								
64	Ordin	ary Best			8	to	0	0	9	0	6
8.6	Com	mon			8	0	0	0			
Welsh	Bars				5	15	0	0	6	0	c

quoted £5. 15/ @ £6. 5/ f. o. b. shipping from 531/4; and ditto 6's, old, to 56, from

Old Rails.—There is but little doing. Old Tees are quoted, c. i. f. New York, £4. 2/6 @ £4. 5/; and Old D. H's., same port, £4. 10/.

Scrap.-The offerings continue moderate and sales light. Heavy Wrought is quoted £4, c. i. f. New York.

prices weak. Best Selected is quoted £70, 5½; good four to six months' single names, and Chili Bars, £63.

Tin,-During the week the market has een greatly depressed, owing to the collapse

over, and an early recovery is looked for.

Tin Plates.—The market is quiet and

prices steady, with probabilities of better fig-The makers have agreed to restrict production 15 %. We quote:

prices are firm. We quote ordinary at ship-

ping port, £17 @ £17. 5/.

Freights-Are Lower. Steam from gow to New York, 10/; Liverpool to New York, 11/, and Liverpool to Philadelphia,

FINANCIAL.

Office of THE IRON AGE, WEDNESDAY EVENING, April 19, 1889.

During the week under review general rade has been rather sluggish. In several leading domestic products speculation is vigcrously renewed, ostensibly based on unfavorable crop reports. Money has continuad easy, almost to the extent of being a drug, mainly attributable to heavy Treasmand on the Stock Exchange. In the export movement there is a continued shrinkage, more noticeable from week to week. The shipments of the week just expired indicate the smallest movement reoorded this year for the same length of time, \$6,520,451 for the corresponding week of that year. Since January 1 the total exports ount to \$94,184,370, against \$113,666,375 same time in 1881. Meanwhile the imports are rolling up to about double the volume of exports. In this aspect the foreign trade is not altogether propitious or reassuring, indicating, as it does, the possibility of a formidable adverse balance, to be settled at some future day. The prices of all kinds of breadstuffs having materially advanced during

as ever, notwithstanding the unprecedentedly low rate of freight in ocean transporta-

On the Stock Exchange, the markets have been irregular and generally heavy. The absence of Mr. Gould in the West-"gone a fishing" as remarked—and the preparations of Mr. Vanderbilt for a prolonged trip in Europe, wholly removed the support to certain lines of stocks so conspicuous for some week, there has been a reduction of 6d. in time past, and the bears were not slow to cess of "pegging up," and profiting from a transient boom, some of the chief operators have quietly withdrawn. On Thursday, Michigan Central, Lake Shore and New Cleveland Pig.—The favorable condition to modify the injunction so as to enable the of the market noted last week has been re- directors to call the election for next month Lake Shore sold as low as 10414, the lower the decline. To-day the active stocks close 1/4 @ 1/4 higher, and the inactive 1/4 @ 2/4, excepting Manhattan Railway, which closes I per cent. lower than yesterday.

The principal dealings to-day were in Lake Shore, 1011/4 @ 1033/4; Denver & Rio Grande, 60 @ 611/8, New York Central, 1251/4 @ 1263/4; Delaware, Lackawanna and Western, 117 @ 11814; Jersey Central, 70% @ 72; Northern Pacific preferred, 763/8 @ 773/8 Reading, 561/8 @ 571/4, Louisville and Nashville, 731/4 @ 741/2; Western Union Telegrah, 811/4 @ 82; Texas and Pacific, 381/4 @ 393%; Milwaukee and St. Paul, 10914 1105; Missouri Pacific, 887; @ 90; Michi gan Central, 771/2 @ 79; Erie, 351/8 @ 361/8 Kansas and Texas, 29% @ 30%; Wabash preferred, 53% @ 55%; Union Pacific, 109% @ 110%, and Northwest, 125% @

Government bonds have been strong and higher, there being a large demand from banks and other financial institutions for the 4's and 41/2's, in exchange for their extended

In State bonds, Tennessee issues have been Steel Rails.—Business continues light active and strong. The 6's, mixed, advanced and prices weak. Ordinary sections are to-day to 56, from 54; ditto 6's, new, to 55

In foreign exchange the rate for 60 days' Iron Rails.—The market is unchanged, ruling dull, with prices weak. We quote Welsh Rails, 30 lb and upward, £5. 5/f. o. b. \$4.87\frac{1}{2}\$, in prospect of a 2 \(\) money market in London, which brings the 60 days' rate nearer to sight bills and cable transfers. The supply of cotton exchange is large this week. Nearly 20,000 bales cleared yesterday, about one-third to the Continent, the remainder to Great Britain.

Commercial paper is in good demand. We quote 60 to 90 days' indorsed bills receivable, Copper.—The market is unsettled and 4% @ 5% %; four months' acceptances, 5 @

Railroad bonds have been fairly active. The Louisville and Nashville Railroad Comof the bull movement, and prices have fallen pany make an official statement of their heavily, Straits Ingot, spot, being quoted at earnings for March, showing them to be the £93 @ £93. 15/ to-day. It is not thought that this state of affairs will continue, howduce from Chicago by rail shows some im-provement, but affords a poor compar-ison with the business of one year ago.

On grain from Chicago the railroads now are competing with 2 @ 2½ cents per bushel by lake to Buffalo, and hence with 5 @ 5½ cents by the canal, making a through water rate of about 8 cents, against the railroads' schedule rates of 16 cents per bushel for Spelter.—There is a fair demand, and wheat and 14 cents per bushel for corn. The breadstuffs markets are more variable and unsettled. Corn shipped to Queenstown is Lead .- The market is quiet, with fair said to have been ordered back. In manudemand and steady prices; English Pig, factured cottons the request for export contomnon, is quoted £14. 10/ @ £14. 17/6. tinues with much steadiness.

> higher. The 4's were bought this afternoon in the shape of obligations incurred in exat 121%, and the 4%'s were queted 116%. The extended 5's advanced 1/4 in the morning, but later declined 3/2.
>
> The closing quotations were as follows:

U. S. 6's, 'Sr, continued at 3'%.
U. S. 5's, 'Sr, continued at 3'%.
U. S. 4's' s 1891 registered.
U. S. 4's 1891 coupon.
U. S. 4's 1997 registered.
U. S. 4's 1997 registered.
U. S. 4's 1997 registered.
U. S. Currency 6s 1895.
U. S. Currency 6s 1895.
U. S. Currency 6s 1895.
U. S. Currency 6s 1896.
U. S. Currency 6s 1897.
U. S. Currency 6s 1898.
U. S. Currency 6s 1899.
U. S. Currency 6s 1898.
U. S. Currency 6s 1898.

The importations of specie and bullion at this port during the week ending April 14 were \$6356, consisting of \$1150 in gold, and \$5206 in silver, as against a total of \$5,360,284 for the week ending April 16 last year. The importations since the 1st of January and since the 1st of August com-

,		ADUATY I-
Gold Sülver	1889. \$448,661 672,949	1881. \$93,574,758 1,035,536
Total		\$24,610,294 lugust 1
Gold	1881-82.	1880-81. \$91,853.726 3,500,887
Total		\$95,360,613 was highly

The following is an analysis of the bank totals of this week compared with that of

last week:				
Loans Specie Legal t'd'rs Tot.reserve Deposits	April 8. \$314,405,800 57,654,200 14,743,800 72,398,000 286,345,400	April 15. \$312,618,200 61,225,600 26,568,900 77,794,500 291,353,400	Dec. Inc. Inc. Inc.	
Reserve required Surplus Circulation.	71.386,350 811,050 20,076,900 MINING	72,838,350 4,956,150 20,007,000 STOCKS.	Inc.	1,252,000 4,144,500 69,900

The latest quotations for mining stocks are as follows

. 1		APIUL,	WERECO.
2	Amie	3.8	32
7	Alice	2.00	3.00
	Bechtel		
-	Belle Isla	-3	95
. 1	Buokeye		
9		5	****
7		2.10	3 30
	Bull Dom	0 0 0	25
-	Bonanza C	3	5
.	Boulder	2	3
1	Boston C		19
	Rig Pittaburgh	74	80
۰,	Bradshaw	15	18
. 1	Bradshaw	10	II
-	Cala vorme		
f	Caledonia	40	70
2	California		15
- 1	Consolidated Imperial	4	7
1	Consolidated Virginia	70	71
- 1	Chrysolite	5.60	5.25
t	Cent. Ariz	3.00	85
	Cherokee	30	
0			
	Dahlonega		6
9	Durango	43	****
2	Dunkin	35	****
- 1	Decatur	1.30	
в	Eureka C	1.50	
	Findley		20
9	F. De Smet	6.00	7.00
8	Cl Places	0.00	
-	G. Placer	29	
	Granville		4
_ 1	Goodshaw	40	
8	Great Eastern		8
0	Green Mountain		2.05
	Hukill	49	
8	Horn Silver	1.00	13.00
	Hibernia	14	
-			15
	Hortense	25	28
Ď.	Iron Silver	2.15	2.20
	Lacrosse	24	30
9	Leadville		85
-	Little Pitts	2.00	
	L. Chief	85	0001
er:	Moeso Silver		30
	Мооне		1.25
5	Miner Boy		
0		6	8
2 (Mexican	8.00	8.621/2
-	Navajo	99	1.05
	North Stan	15	****
9	Ori, and Mil		24
h	Rappah'k	28	
4	Robinson	2 50	2.55
,	R. Sun	2 30	
	Red Eleph		40
Ò	ned Eleph	10	****
	8. Nevada	8 50	9.00
	Standard	16	18
1	S. Cliff	1.15	1.25
^	Sutro	57	60
al	Spr'g Val	****	4.10
_	Stormont	80	85
9	S. Bulwer	00	
1	@ Ulitan	***	25
ă.	S. Hiten		15
	South Pacific	71	73
	St. L. 1 and 4	****	15
1	9t. L. a and 3	62	63
1	Tioga	20	
1	Union Con		14.00
	Unadilla	II	-4.00
2	Vinina		****
1	***************************************	1.40	***

GENERAL HARDWARE.

The trade was surprised on Tuesday by the announcement of the financial difficulties of the Providence Tool Company, the first intimation of which was given by the publication on that day of the following notice to creditors by the president, John B. Anthony : "The company being unable to meet its engagements, I beg to assure all creditors that a general meeting will be called as soon as a statement of our affairs can be prepared. Following this the corporation will be called together, to act upon any recommendation which may be made by the creditors. I have no doubt the company will adopt as before exactly such measures as the creditors may We have desire.

Very little is known in this city respecting the affairs of the company, even at the com-mercial agencies. The view generally accepted in regard to the present embarrass-ment is that the enormous plant of Gun-making Machinery, which was made necestending their works. A meeting of creditors will take place next Saturday, and of compiling and time spent in reading proof, among them are supposed to be several metal have induced us to have each page electromen and bankers, as the company are understood to have received liberal assistance at the time of their temporary suspension some years ago, on account of irregular payments by the Turkish Government, a prominent Wall street banking house having helped them through with success. In regard to the effects of floods in the Southwest, it is not believed that any disturbance from that source would account for the present difficulty.

Henry B. Newhall, agent for the company in this city, has sent us the following:

New York, April 19, 1882. Answering your inquiries in regard to the recent suspension of the Providence Tool Company, I have to say that I am not offically informed as to the prospects for the future, but I understand that there is to be a creditors' meeting on Saturday, the 22d inst., after which, I have no doubt, arrangements will be made by which the company will immediately resume business. I see no reason why the delivery of any goods manufactured by the company should be interfered with, as the stock on hand is considerable, and even though the machinery were to lie idle for a few days it would be only a short time before the production could be made equal to To the Editor of The Iron Age. - DEAR SIR

the week under speculative influences, the prospect of a removal of the embargo on our exportable products is apparently as remote hold \$4,144,500, and the banks now hold \$4,956,150 in excess of legal requires sold the productions of the Providence Tool Company will in no way affect me financially. I have for many years sold the productions of the Providence Tool Company, but only as their agent, and in the same manner as I sell the manufactured goods of a number of other large manufacturers. My business will be in no way embarrassed. Very truly yours,
HENRY B. NEWHALL.

The demand for General Hardware is more active than at our last writing, and the tone of the market is steady. No changes in values have been announced during the week.

The Atlantic States Nail Manufacturers' Association held a meeting in this city on they say: "Hereafter, for convenience, that part of our business relating to Valves was confirmed, viz.: \$3.40 @ \$3.50, net, for rod. to 6od., according to quantity. The tone of the market continues weak, and desirable orders are easily placed on the basis of \$3.30. The fine spring weather that we are now enjoying has stimulated demand, and we hear of considerable business transpiring. The stocks of Nails in makers' hands are said to be unusually light for this time

We take pleasure in printing the following communication from the Yale Lock Mfg

Co.:

To the Editor of The Iron Age.—Six: In the press dispatches sent out from Baltimore on the 4th inst., the statement was made that "a number of Yale locks in the Baltimore Post Office had been opened by a colored boy with a thin piece of steel, and their contents purloined." The statement made was utterly without foundation so far as it refers to the Yale lock, as there have never been any of the Yale lock boxes in the Baltimore Post Office. In confirmation of this statement we refer to the following extract from the Baltimore Sun of April 12th: from the Baltimore Sun of April 12th:
"Suit for Damages.—In the United States

Circuit Court, yesterday, suit was entered by the Yale Lock Mfg. Co., of Stamford, Conn., against Col. Harrison Adreon, postmaster of Baltimore, claiming \$10,000 damages. The declaration alleges that the company has been put to great expense in publishing refutations of charges alleged to have been made to the agents of local newspapers foreign Bessen lishing refutations of charges alleged to have been made to the agents of local newspapers by Colonel Adreon, on or about April 3, as follows: 'That a colored boy had, by means of a piece of steel, opened the locks of the lock boxes of the post office in Baltimore, and that the same were Yale locks.' Also, that after being informed that they were not Yale locks, manufactured by the above company, Colonel Adreon insisted in maintaining that they were, to the injury of the reputation of the locks of the company."

The publication of the dispatch referred to has done us serious injury and damage in our business. Customers and users of the Yale locks, from all parts of the country, have written us, inclosing the item and asking if it were true. Our competitors have cagerly seized the opportunity for disparaging the Yale lock, and are making use of the statement to deter customers from buying

ing the Yale lock, and are making use of the statement to deter customers from buying our goods. Our only remedy is to have equal publicity given to the denial as to the original false report. At best this will only partially undo the damage, as a report always tracks factor and further than a will be started to the control of the started to the sta ways travels faster and further than a subequent denial.

A circular has been issued by Baron Mfg. Co., of Bellaire, Ohio, informing the trade that on the 21st ult. the name of the Company was changed, by legal authority, to the the Bellaire Stamping Company. In all ment on page 26. other respects the company remains the same

We have received from Paddock-Hawley Iron Company, of St. Louis, Mo., a copy of their very handsome catalogue of Blacksmiths' Supplies, Heavy Hardware, Wagon, Plow and Carriage Materials, which they have just received from the binder's hands. United States bonds have been firm and their liabilities are perhaps \$500,000, mostly from good clear type, on heavy tinted paper. In a circular to the trade they say : typed. In case you wish to publish a cataname or number of page at top of margin, at a figure that will reduce the cost of an edition to a minimum, and save all the trouble and delay incidental to such an undertaking. The price lists are all standard, and as these plates are not blocked, but made to use on patent blocks, any reading matter or figures may be taken out or changed at a small cost." We invite the attention of the trade to their advertisement on page 27.

An interesting item on fast wood-sawing will be found in the advertisement of Har-

HIGGANUM, CONN., April 1, 1882.

St. Louis, Mo., April 13th, 1882. One of our shops was partially destroyed by fire last night, 12th inst. We expect, however, to be in running order again in about a week, and any orders you may favor us with will have prompt attention.

Very respectfully, GROOM SHOVEL COMPANY. Mohawk and Hudson Mfg. Co., Waterford, N. Y., have issued a notice to the trade, under date of the 15th inst., in which

name of the Eddy Valve Co."

E. Bissell & Co., in an advertisement on the opposite page, announce a special sale of Hardware, Cutlery, House-furnishing Goods, &c., to be held at their salesrooms, Nos. 83 Chambers and 65 Reade streets, on Thursday and Friday, 27th and 28th inst.

and Hydrants, will be conducted under the

The manufacturers of Strap and T Hinges held a meeting in this city to-day, at which existing prices and terms were reaffirmed.

IRON.

American Pig.-Business continues in he quiet condition so frequently referred to of late, but while little or no new business is reported, the deliveries on back orders continue to be very large, and we do not hear of the slightest pressure to sell, either from first or second hands. We quote Foundry No. 1 X, \$25 @ \$25.50; Foundry No. 2 X, \$24; Gray Forge, \$23 at tidewater.

Scotch Pig.-The only sales worthy of nention that have come to our notice during the week are 500 tons Glengarnoek and Carnbroe on private terms. The tone of the market is weak. We quote : Eglinton, \$23; Carnbroe and Glengarnock, \$24; Gartsherrie, \$25 @ \$25.50; Coltness and Langloan,

Sales, to arrive, are reported of 15,000 tons foreign Bessemer Pig at \$24.

Budd & Ellis, No. 23 Cliff street, have been appointed agents for Messrs. Kreiger & Co., makers of Steel Wire Rods, at Haspe, Germany.

F. W. Jesup & Co., of No. 67 Liberty treet, have been appointed agents for the Nashua Iron and Steel Company, of Nashua, N. H., for the sale of their Steel Locomotive Tires, Boiler Plate, Iron and Steel Axles, &c. We invite attention to their advertise-

METALS. Copper.-Some considerable sales of Lake

Copper are spoken of as having been effected during the week to brass manufacturers, deliverable during the ensuing four months, May, June, July and August, at 18¢, the quantity ranging from 6,000,000 lb all the way to 20,000.000 lb, but so far as we can ascertain the incide forms her about the state of the second contraction the incide forms her about the second contraction the second contraction the second contraction that the second contraction the second contraction that the second contraction that the second contraction the second contraction that the second ment is that the enormous plant of Gunmaking Machinery, which was made necessary in filling the old Turkish contract for
600,000 Riffes, proved too much for them, in
the interest account. To be sure, a considerable part of the machinery was adapted
to the manufacture of the "Household"
Sewing Machine, and the concern engaged
to some extent in hardware specialties,
but with all their enterprise there was
no sufficient margin of net earnings; in
other words, the business did not make
adequate returns on an investment of some
\$2,000,000. According to one estimate,
their liabilities are perhaps \$500,000, mostly

have just received from the binder's hands.
The book contains 600 pages, divided as follows: 26 pages are devoted to Iron, Steel,
Agricultural and Blacksmiths' and
Blacksmiths' and
Woodworkers' Tools; 120 pages to Wagon,
Plow and Carriage Heavy Hardware and
Wagon, Plow and Carriage Malleable Castings; 217 pages to Carriage Hardware, Trimmings, Adjustable Tops, Paints and Varnishes, Plated Goods and Lamps, and the
balance of the book to Patent Gears, Wagon,
Plow and Carriage Woodwork and a general
index. This catalogue is very handsomely and
\$2,000,000. According to one estimate,
their liabilities are perhaps \$500,000, mostly

from good clear type, on heavy tinted paper. stock left from the previous year, 10,000,000 bb, we find that the total available supply was 84,000,000 bb. The consumption in 1881 is estimated to have been 60,000,000 bb, while of compiling and time spent in reading proof, have induced us to have each page electrotyped. In case you wish to publish a catalogue, we can furnish you with these 600 plates, or any part of them, without our plates, or any part of mage at top of margin, but caused a slight reduction in consumption, and in consequence thereof a gradual decline in the price occurred, which, from 20¢ in January, gave way gradually to 18¢ in April of the present year. It is expected that the Lake Superior mines will again report for the current year an increase of their yield of 5,000,000 fb, and that the Western mines will turn out in 1882 some 10,000,000 b more than they did in 1881. Should these expectations be realized. should these expectations be realized, we should produce this year about as much as Chili, which will probably yield 40,000 tons. But we are not going to stop at this point; on the contrary, our Western territories, from New Mexico and Arizona to

ment, present and prospective, it is eviden that trade will have to be remarkably brisk that trade will have to be remarkably brisk to allow consumption to cope with such abundant supplies. London gave way £1 yesterday, cabling Chili Bars £64, and Best Selected, £70. To-day we receive a dispatch from there as under: "The market is unsays: "The country inclined to substitution for some time past. Of the Schuylkill says: "The country inclined to substitution for some time past. settled and prices weak. Best Selected is quoted £70 and Chili Bars, £63." Manufacquote: Bottoms, 31¢ @ 32¢; Braziers, 30¢ @ 36¢; Circles, 33¢ @ 36¢; Sheathing, 28¢, and Bolt Copper, 30¢; Segment Sheets, 33¢; Fire-box ditto, 30¢.

Tin.-The week under review has been an eventful one, prices falling heavily. London declined from £106 to £96 in a single day, on the 14th inst., and between last night and this morning the price of Straits there fluctuated between £91 and £94, with an unsettled market, failures in the metal trade having taken place, and more of them being feared. When we come to consider that the price of Tin had been driven up to \pounds 114 simply by speculation, and for which there has at no time been any valid cause we need not be astonished at lower prices and, indeed, have to be prepared to see them is more or less non still lower. Our market inal. No spot sales have taken place, although it is said that 100 tons affoat have been sold at 22½¢, which price could not be procured again. With the London market at £94, or a parity of 215 ? B here, the markets at Singapore, Penang and in Australia are at a standstill, and with no demand for either Europe, America or China. As stocks are now rapidly accumulating at the places of production, a considerable drop there seems inevitable. Shipments first half of April from the Straits to the United States have been 100 tons, and to England none. We quote, at the close, Straits and Australian, nominally, 23¢, against the average of 19/2¢ the past four years. On April 15, 1881, according to Messrs. William I. Russell & Co., 12 Cliff street, New York, the price of Straits was 20 % \$; April 15, 1880, 1934 \$; April 15, 1879, 14% \$, and April 15, 1878, 14½ \$, the visible supply at New York and Boston, April 15, 1882, being 3546 tons. Consumption from January 1 to April 15, 1882, 2675 tons. We receive ourselves from London to-day, the ensuing cable message: "During the week the market has been greatly depressed, owing to the collapse of the bull movement, and prices have fallen heavily, Streit have their content of the collapse of the bull movement, and prices have fallen heavily, Straits Ingot being quoted at £03 @ £03. 15/ to-day. It is not thought that this state of affairs will continue, however, and an early recovery is looked for." Tin Plates.—It has almost come to be regarded by the trade on this side as an invariable rule that any agreement among the Welsh makers to restrict their make promises a makers to restrict their make promises a weak and declining market, and the present state of affairs only tends to confirm this opinion, since the life seems to have dropped out of the market. As, however, an agreement to curtail will lead to at least some reduction in the output, the market may still be benefited by the move later on. For the moment, no doubt, the decline in, and uncertainty about, the future of Pig Tin has something to do with the present dullness. The season is, however, too well advanced to admit of a long continuous the control of uance of this unsatisfactory aspect, as dealers' stocks will soon require to be replenished, and the present would seem to be a favorand the present would seem to be able time to enter the market. We quote toward the close, ordinary brands, large toward the close, ordinary brands, la lots, per box: Charcoal Bright, \$6 lots, per box: Charcoal Bright, \$6 (a) \$6.25; ditto Ternes, \$5.25 (a) \$5.50; Coke Tin, \$5.12½ (a) \$5.37½, and ditto Ternes, \$5.12½. Coke was cabled from Liverpool yesterday 15/6, and Charcoal, 18/6 (a) 21/. We receive from London to-day the following cablegram: "The market is quiet and prices steady, with probabilities of better figures. The makers have agreed to restrict production 15 \$4." production 15 %."

Lead.—Since our last report there has changed hands between 200 and 300 tons at changed hands between 200 and 300 tons at \$4.95 @ \$5 for Common Domestic, the closing quotation being 5\$. We quote Refined, which remains inactive, \$5.10 @ 5.12½, nominally. St. Louis announces a very quiet market: Hard at \$4.65 and Soft at \$4.70, with 38\$ freight, From London we receive per cable, to-day the ensuing: "The market is quiet, with fair demand and steady prices. English Pig, common, £74. 10/@ English Pig, common, £14. 10/ Manufactures have been sub ject to no change since our last. We quote: Pipe, 7½¢; Sheet, 8¢; Tin-lined Pipe, 15¢, and Block, 45¢; all less to \$\%\$ to the trade.

Spelter and Zinc.-The market for Common Spelter has been quiescent, though firm, at 5 1/4 \$\phi\$ @ 5 7/8 for Domestic, and 5 1/8 \$\phi\$ This year's (@ 5% ¢ for Silesian. This year's consumption in this country we estimate at 30,000 tons, if the demand remains steady, as it has been since January 1st; the domestic output we value at 18,000 tons, so far as we are able to judge at present; in order, therefore, to be able to carry into 1883 about the stock we had on January 1, 1882, we shall require, in all, 12,000 tons of foreign, of which we have received, so far, about 3500 tons. We quote Bertha Refined, 8¢, and Bergenport, 9½¢. Sheet Zinc—is moderately active, at 7¾¢ @ 8¢. We receive from London the following dispatch per cable: "There is a following dispatch per cable: "There is a fair demand and prices are firm. We quote We quote Ordinary, at shipping port, £17@ £17. 5/

Antimony.—People are taken a little aback in consequence of the announcement of failures in the metal trade in London, otherwise the market remains tolerably steady, with a fair jobbing trade doing. We quote Cookson, 14¾¢ @ 15¢, and Hallett, 12½¢ @ 13¢, according to quantities wanted.

COAL.

The Coal trade is dull and inactive, there being no perceptible change in this respect compared with one week ago. The only new feature affording satisfaction is the apparently happy turn of events in the Bitumin trade, the apprehended strike in the Clear-field districts having been averted. The miners were not sustained in their purpose by the chiefs of the trade organization, and continued as before. In anthracite, prices are weak and irregular, the concessions o the part of dealers, according to report, being about 50 cents per ton. There is n precense that circular prices are obtained

In the face of this extraordinary developt | On the other hand, it is claimed that since the suspension of mining in the Cumberland region, consumers of Bituminous are more inclined to substitute the harder varieties. For Eastern orders there is more doing than

> Of the Schuylkill trade the Miners' Journal says: "The country is evidently not suffer-ing for stove-burning coal, and it is only sacrificing a valuable commodity to attempt sacrificing a valuable commodity to attempt to force it upon an unwilling market. Still it is an inconvenient thing to have on hand when once taken out of the ground and broken up for general use. The wisdom of restricting production is very apparent under the circumstances, and had there been more of it ordered for this month it would be all the better for the trade. There will have to be a marked improvement in the demand to prevent a still greater demoralization of the trade before the period usually assigned for the opening of the spring trade, and the least evidence of an improving tendency is certainly not discernible to-day."

In the Bituminous trade prices are spoken

of as drooping, and without profit.

The total tonnage of Anthracite Coal from all the regions, for the week ending April 8, as reported by the several carrying companies, amounted to 400,077 tons, against 401,562 tons in the corresponding week last year. The quantity of Bituminous Coal sent to market for the week amounted to 71,432 tons, against 106,161 tons in corresponding week last year.

week last year.

Freights to Boston, \$1.25 @ \$1.40 from Philadelphia; and from Baltimore, \$1.50.

At a recent meeting of the miners and shippers of Coal for the Western market,

shippers of Coal for the Western market, held in this city, it was **Resolved*, That the prices for Buffalo and Lake ports be reduced from present prices, as follows: Grate, 30¢; Egg, 55¢; Stove, 65¢; Chestnut, 65¢; and that at all interior points the same reduction be made, excepting that at all points the Grate and Egg shall be 25¢ less than Stove and Chestnut—prices to take effect on the 17th and nut-prices to take effect on the 17th and extend to June 1, 1882.

Resolved, That the price of Pea Coal be \$1 less than the price of Chestnut, and that the size of Coal known as No. 4 be 25¢ \$\text{(p)}\$ ton above Stove, making the prices in gross tons

as follows, viz.: Chestnut.....Salamanca and Bridges, on cars, No. 4......

OLD METALS, PAPER STOCK, &c.

The purchasing prices offered by dealers are as follows : Copper, heavy..... light..... Copper Bottoms... Yellow Metal..... Brass, heavy Brass, light... Pewter, No. 1. Pewter, No. 2. Wrought Iron Light do.... gnt do.... Stove Plate... Machine .05 (0

The prices current (prices paid by local dealers) for Rags, &c., are as follows: Canvas, Linen 9 D. 24c. 0 4 C

White Cotton, New "	3½C. @
No. 2	2 1/2 C. @
White, No. 1 "	4C. @
" No. 2 "	21/4 C. @
White, No. 1	1 C. @ 11/4 C.
	C. @ 10 C
Mixed Rags	2 C. @ 21/4 C.
	11/4 C. @
Jute Butts	2 C. @ 21/4 C.
Controlog Dameine	C. @ 4 C.
Book Stock	21/4C. @ 23/4C.
Newspapers "	@ 11/4C.
Waste Paper and Scraps "	1/2 0 1/4 C.
Kentucky Bale Rope "	35c. @ 4 C.

FOREIGN TRADE MOVEMENTS.

The following is a summary of foreign rade movements for the past week :

IMPORTS.

For the week ending April 14:

Since Jan. 1....\$146,382,189 \$121,634,940 \$149,31c,282 Included in the imports were articles of merchandise valued as follows:

		quantity.	Value
	Anvils		\$2.40
	Brass goods	38	4,07
	Bronzes	14	2,04
1	Chains and Anchors	72	3,88
1	Clocks	48	5.82
1	Copper		97
1	Cutlery	122	36,34
1	Gas fixtures	X	12
ı	Guns	182	26,66
Ì	Hardware	IO	40
Į	Iron, pig, tons	8,026	149.05
ı	Iron, sheet, tons	171	7.67
ı	Iron ore, tons	1,298	4.35
1	Iron, other, tons	4,112	97,26
ı	Iron, R. R., bars	3,114	30,29
1	Lead, pigs		13.75
1	Machinery	168	16,61
ı	Metal goods	917	27.37
1	Nails	3	78
į	Needles	8	4,14
į	Nickel	2	898
ł	Old metal.	****	7,83
Į	Pins	5	413
I	Platina		86;
	Plated ware	2	4.5
	Quartz	4	20
	Quicksilver	375	10,948
	Reg. attimony		1,924
	Saddlery	12	2,239
	Steel	53,819	801,620
l	Spelter, lbs		5,000
ĺ	Silverware	5	576
ĺ	Tin, bxs	47,812	252,311
i	Tin, 1,200 alabs, 45,266 lbs	****	11,347
ĺ	Wire	295	2,568
	Zinc, lbs	96,006	9,126

The following affords a comparison with

previous dates	*		
	For the week.	15 Weeks 1882.	Same tim
Gutlery, pkgs	122	2,280	2,235
Hardware. pkgs.	10	340	393
ron, R. R. bers.,		44,828	48,620
Lead, pigs		9,505	4,709
steel, pkys	53,819	559.702	817,513
l'in, boxes	47,812	655,746	425,010
lin slabs, lbs	45,266	3,316,084	4,878,744
		Contract Contract	

EXPORTS OF SPECIE. For the week ended April 15:

\$503,000 Total since January 1, 1882..... \$14,490,253

EXPORTS EXCLUSIVE OF SPECIE. For the week ended April 18:

ime in 1873. ime in 1872.

Since Jan 1....\$100,187,454 \$113,666,375 \$92,184,370

IMPORTS

Of Hardware, Iron, Steel and Metals ink the Port of New York, for the Week ending April 19, 1882 :

Bardware, Blake Bros. Machinery, cs., 2 Boker Hermann & Co. Cases, 6 Chains, cks., 26 Hardware, Cutlery and guns, pgs., 68 Crabb W. & Co. Machinery, cse., 1 Machinery, cse., 1 Davis Bros. Cases. 2 Cases, 2 Downing, Sheldon & Co. Arms, cs., 11 Duval H. R. Cases, 12 Duparquet E. H. Cases, 2 Cases, 2 Drexel, Morgan & Co.

Cases, 12 Cutlery, cs., 5 Gun caps, cs., 2 som H. & D. Arms, cs., 5 Geisenheimer & Co. Saws, cs., 2 Graef Cutlery Co.

Case, 1 Henderson Bros Machinery, Machinery, pgs., 30 Hensol, Bruckmann & Lorbacher Machinery, cs., 24 Hall, Nicol & Granber Case, z Hartley & Graham

4.85
5.10 Guns, cs., 12
Hoe, R. & Co
Files, Cask, 1
Hidich A. H.
Casks, 10
Chains, pcs., 8
Howard Bros. & Co
Cases, 8
James Emil
Machinery, cs., 7
Krickel, Gould & Co,
Case, 10
Case,

Machinery, CS., 7
Krickel, Gould & Co.
Case, 1
Kurshudt Mfg. Co.
Machinery, Cs., 5
Castings, Cs., 3
Livingstone Morris
Nails, bags, 300
Moss F. W.
Files, cask, 1
Merchants Disp. Co.
Gun caps, Cs., 4
Mayer, Robert & Co.
Litho, machines, 4
Noyes, Smith & Co.
Cases, 2
Peters & Galhoun
Packages, 4
Pope Thos. J & Co.
Cases, 1
Rothschild Bros, & Co.
Cases, 7
Sanderson & Son
Punch, Case, 2

Punch, case, z Schuyler & Duane Case, z Schover!

Schoverling, Dalyj Gales Gales
Guns, Ca., s2
Gun barrels, Ca., 7
Seymour W. N.
Casks, 2
Simpson & Spence
Valve, box, 1
Strubler, Lau & Co
Guns, Cs., 6
Terkmle, J.
Machinery, Case, 1 Terkmie, J.
Machinery, case, 1
Vogel Wm.
Ironware, cse., 1
Ward, Asline
Cutlery, cs., 5
Cases, 6.
Wilson, D. H. & Co.
Gun caps, cs., 2
Wiebusch, Hilger & Co.
Cases, 28

Cases, 28
Casks, 6
Cutlery, cs., 8
Witte John G. & Brc,
Cutlery and hardware, pgs., 24

ware, pgs., 24
Order,
Anvils, pgs., 172
Casks, 11
Cutlery, cs., 3
Guns, pgs., 19
Machinery, pcs., 102
Machinery, pgs., 62
Cases, 10 Cases, 10 Machinery, gs., 4

Iron

Baring Bros. & Co. Wire rods, coils, 574 Pig, tons, too Brown Bros. & Co. Swedish bars, 2393 Pigs, tons, 400 Swedish wire, coils, Swedish sheet, bdls. Bond, Parsons & Co. Sheets, bdls., 241 Brockner, Evans & Co. Wire netting, rolls, Wire netting, rolls,

1d Codington, T. B. & Co.
Sheet, bdls., 442
Crocker Bros.
Pig. tons, 600
Spiegel, tons, 72½
Elliott Sons & Co.
Ore, tons, 910
Pig. tons, 500
Cre, kgrs., 255,630
Howard & Morse
Wire, rolls, 220
Irwin, Richard & Co.
Pig. tons, 200

Wire, rolls, 220
Irwin, Richard & Co,
Pig, tons, 200
Knauth, Nachod &
Kuhue
Recipients, pgs., 38
Lundberg Gust.
Rough bars, 205
Bars, 203
Mason John W. & Co
Wire rope, coils, 4 Mason John W. & Co Wire rope, coils, 4 Millikin & Smith Wire, bdls., 6:8 Bundles, 587 Morton, Bliss & Co. Rails, 2461 Naylor, Benzone & Co. Bars, 1547 Bundles, 300 N. Y. Central & H. R. R. Rails, 2068 Ogden & Wallace Sheets, 924 Bundles, 277

EXPORTS

Of Hardware, Iron, Machinery, Metals, &c., from the Port of New York, for th Week ending April 18, 1889: Dutch West Indies. Smyrna

Ag. imp., pgs. 8 Pumps, pkgs. s Nails, kegs.... 25 Venice. Hamburg. Nails, kegs.... 6 Ptlm.gls...903,461 69,069 fldw., pkgs... 95 2,649 Clocks, bxs... 26 2,048 Mach'y, pkgs 5 920 Nails, kegs... 4 77 Leghorn. Mf. iron, pkgs. 1 Genoa. Nails, kegs... 4 Cartridges, cs. 250 C.wringers, cs. 4x Sew. ma., cs. 2355 Ptlm., gals. 42,354

Rotterdam. Clocks, pkgs... 5 Hdw., cs..... 8 Mf. iron, pkgs. 4

Pierson & Co.
Sheet, bdls., \$1
Parker, A. B.
Rods, bdls., \$87
Phelps, Dodge & Co.
Sheets, bxs., \$3
Prosser, Thos. & Sons
Tubes, bdls., 17
Rice Lewis & Son
Rolled Joists, 24
The Lalance & Groejean
CO. Mf. iron, pkgs 2 43
Ag. imp., pgs. 161 4.850
Sew. ma., case 1 55
Pumps, pkge. 1 56
Hdw., pkgs... 336 5,650 Uddervalla. Ptlm., gals..68,793 6,879 Naph., gals.38,900 2,723 Cronstadt.

Co.
Sheets, bdls., 68r
The Star Union Line
Iron Jeists, 306
Weiss M.
Cask, r
Order, Ptlm., gals. 154,788 15,400 Tuborg. ler, Fig. tons, 2989 Ore, tons, 829 Wire rods, coils., Stockholm,

Rods, pgs., 2481 Oil barrel hoops Oil barrel hoop bdis., 1998 Sheet, bdis. 1730 Old rails, pcs., 787 Old fish plates, 200 Old fish plates, ton

Casks, 43 Spiegel, tons, 403½ Rails, 2013 Fish plates, cs., 5 Wire, rolls, 31,042 Cases, 250 Bars, 7653 Sheets, 21 Wire, ecs., 0 Barrel hoops, bdls., 999

Steel. British East Indies Abbott Jere. & Co. Cases, 61 Rods, bdls., s15 Cases, 34 Ptlm., gals.243,500 35,000 Marseilles. Cases, 34 Brown Bros. & Co. Blooms, pcs., 155 Rods, pgs., 4240 Brown Wm. Sew. ma., cs.. 4 300 Oporto. Brown Wm.
Packages, 159
Collins L. E. & Co Liverpool.

Collins L. E. & Co.
Blooms, tons, 480
Crabb W. & Co.
Wire, cks, 2
Carey & Moen
Rods, colls, 444
Dolge A.
Wire, cks., 2
Drexel Morgan & Co.
Blooms, 1775
Steel ware, cs., 7
Downing Sheldon & Co.
Springs, 100 Pumps, pgs... 7 Mf. iron, pgs.. 6 Ag. imp.,pkgs 304 Duval H. R. London.

Duval H. R.
Flates, 76
Knoblauch & Lichten
stein
Blooms, 022
McIhanney, Ed. H.
Rails, 1191
Moss, F. W.
Bundles, 233
Bars, 29
Casks, 4
Woodford W. O.
Bundles, 357 Bundles, 357 Bars, 97 Plates, 12 Cases, 16 Packages, 52 Glasgow. Mf. iron, case. 1

der, Blooms, 5482 Tubes, 190 Packages, 22 Bundles, 9 Cases, 22 Springs, 410 Strips, cks, 96 tean Colonics. Metals

Ansonia Clock Co.

Merchandise, pgs, 11
Aikman James & Co.
Tin plates, bxs, 941
Backe Simon & Co.
Tin, cs., 8
Baring Bros. & Co.
Tin, slabs, 1166
Bishop Victor
Platinum, box, 1
Brown Bros. & Co. Bishop Victor
Pistinum, box, 1
Brown Bros. & Co.
Brass tubes, bdls., 66
Brass tubes, cks., 2
Brass tubes, cks., 2
Coddington T. B. & Co.
Tin plates, bxs., 182
Emons Jas.
Ores. sacks. 20 Grinnell, Minturn & Co. Yellow-metal she th-

ing, cs., 35 Gummey. Spering, In-gram & Co. Tin plates, cs., 46 Lamarche's H. Sons Rolled sinc, cks., 15
Marval Bros. & Co.
Spelter, plates, 340
Morgan W. D.
Tin plates, bxs., 125
Morris L. W. Morris L. W. Lead, piping, cks., 6 Pacific Dispatch Co. Tin sheets, bxs., 38 Phelps, Dodge & Co. Tin plates, bxs., ro, Black taggers, bxs.

Antimony, cks., 80 Tin, ingots, 279 ofield Geo. C. Scofield Geo. C.
Copper ore, bbis.,
Trowbridge D. & Co.
Old metal, bbl., z
Van Pragg A. & Co.
Tinfoil, case, z
Vom Cleff & Co.
Chains, cks., 3
Order Order, Tin plates, bxs., 39, Terne plates, bxs., Spelter, ingots, 12, Speiter, plts., 4150 Mineral ore, kgs., Mineral ore, Kgs., 250,000
Tin, slabs, xx,501
Brass scrap, cks., 16
Antimony, cks., 34
Zinc, cks., 50
Tin, ingots, 600
Terne plates, for
Chicago, bxs., 1235
Tin plates, for Chicago, bxs., 435
Tin fold, cs., 2
Shot, kegs, 20

Quan. Val. \$521 Ptlm., gais...4: Mf. iron, pkgs Hdw., pkgs... Nails, cs... Hdw., pge... 1 \$48 .4714 8 96 . 9 Constantinople.

Ag. imp., pgs. 3 Mach'y, pkgs. 3 Sew. ma., cs. 2355 Mf. iron, pkgs 4 Ag. imp.,pkgs 10 Copper, bars. 186 Hayti. Ptlm., gals...sito Hdw., pgs... 5 Mach'y. pkge. 1 Nails, kegs... 10

Porto Rico. Bremen. Sew. ma., cs... Clocks, bxs... Nails, kegs... Mf. iron, pgs. Iron safes... Copper, cs.... R.R.matl.pgs Ptlm., gals...30 Hdw., pgs.... Ag. im., pkgs. Mach'y, pkgs. Arms, cs....

Arms, cs..... Cutlery, cse... Cuba. Ptlm., gals. 217,768 26,325 Ptlm., gals. 140, 170 10,550 Copenhagen.

Cutlery, cs... Spikes, kegs... Clocks, bur... Sew. ma., cs. Bellows. Hdw., pkgs... Mf. iron, pkgs... Mf. iron, pkgs... Ir. gds, cs... Pumps, pkgs... Metal, brs... Metal, brs... Ptlm., gals. 143,716 11,00 Danish West Indies. Hdw., pkgs... 2 Ag. imp.,pkgs 7 Amsterdam. Pins, cse...
Ptim., gals...
Ag. imp.,pkgs
Iron safe...
Br'ss g'ds., cs.
Scales, pkgs...
Ag. imp.,pkgs
Nails, kegs...
Brake fix.,bx. Mf. iron, pkgs 13 91: Iron safe.... 1 100 Dutch East Indies.

Ptlm., gals.627,970 72,019 Antwerp. Mach'y, pkgs. 5 1,300 Ag, imp.,pkgs 43 530 Sew. ma., cs. 30 600 Mf. iron, pkgs 23 747 Ptlm., gals.308,600 24,600 French West Indies Ptlm., gals...9500 1,109 Havre.

Mach'y, pkgs. 5 I. r. gds., ese.. z Ag. imp., pgs. 171 Clocks, pkgs.. 3 Hdw., cs..... 30 Alicante. Ptlm., gais. 222,500 38,80

159

Seville.

Bilboa.

Brazil.

Venezuela. Mf. iron, pkgs 67 Ag. imp., pgs. 12 S.m.needles,cse 1

mps, pkgs.

Ag.imp.,pkgs Sew. ma., cs.

Ptlm., gals.. 90,750 7,300 Ptlm., gals. 138,100 14,155 Ptlm., gals. 113,618 8,50 Hdw., pgs. Ptlm., gals.

Ptm, gals..834,362 64,869 Clocks, pkgs.. 33 12,078 Sew.ma.. cs... 11 50 Naph.,gals.159,000 13,000 Pumps, pkgs.. 23 35,78 Agk.imp, pgs. 3 35,78 Agk.imp, pgs. 3 35,78 Mf.iron, pgc. 1 37 Mach'y, cs... 59 2,827 Iron, cases...
Mach'y, pkgs.
Nails, kegs...
I. r. goods, cs.
Clocks, bxs... Tacks, cs..... Barrows, pkgs Nails, pgs....

Nails, pkgs... 22 Nails, pkgs... 120 Sew. ma., cs... 132 Ox. zinc, bbls. 100 Ag. lmp.,pkgs 18 Hdw., pkgs... 11 952 662 British North Amer-

Sew. ma. cs. 47
Mach'y, pkgs. 5
Hdw., pkgs... 60
Cutlery, cs... 7
Pet., gals... 12,945 Ptlm., gals...5479 697 Hdw., pkgs... 4 150 Sew. ma., cs.. 10 200 Iron, tons... 100 2,100 Ag. imp., pkgs.
Mach'y, pkgs.
Clocks. pkgs.
Nails, kegs.
Cartridges, cs
Pumps, pkgs.
I. r. g ds., pkgs.
W. mill. British West Indies. Chains...... 2
Ag. imp., pgs. 2
Nails, kegs... 153
Ptlm., gais...19,169
Anchors.... 12
Y. metal, cs... 6
Solder, bxs... 3
Hdw. nbss... 3 Hdw., pkgs... Mf. iron, pgs. Cartridges,cse Brass gds.,pcs

Cutlery, cs...
Iron, bdls...
Ptlm., gals...67,
Mf. iron, pkgs
Arms, cs...
Hdw., pkgs... British Guiana. Sew. ma., cs.
Pistols, cs...
Bells, box...
Nails, cs...
Boiler...
Windlass... Petm., gals..15,000 1,875 New Zealand. Africa

Mf. iron, pkgs 978 9,332 Ag. imp.,pkgs 978 7,202 Tacks, cs. 4 164 Nails, pgs. 80 9,214 Scales, pkgs. 14 237 Mach'y, pkgs. 48 2,258 Hdw., pkgs. 849 15,679 Ptm., gals.,132,728 18,380 Engines. 4 495 Pumps, pkgs. 32 1,778 Culwary, cs. 2 553 Saws, cs. 12 553 Nails, kegs... 47 Mf. iron, pkg. 2 Ptim., gais...55,000 Iron safes... 8 Iron, bdis... 50 Japan. Ptlm.,gals.938,810 109,654 Clocks, pkgs.. 59 1,254 Br. gds.. pkgs 98 4,850 Saws, cs..... Sew. ma., cse. Wringers, cs.. British Possessions China. in Africa. Cartridges, cse z

Ptim., gals. 65,140 8,644
Nails, kegs... 118 455
Ag. imp., pkgs 250 4,445
Hdw., pkgs... 59 1,244
Arms, cs... 3 220
Sew. ma., cs.. 13 875 United States of Colombia. Hdw., pkgs... 204 Mach'y, pkgs... 256 Ptlm., gals... 10,790 Sew. ma., cs... 184 Boiler the., cs... 3 Mf. cop., pkgs... 4 Clocks, pkgs... 11 British Australia. Ptlm., gals..67,200 0,107 Ag.imp.,pkgs, 6c2 12,402 Tacks, cs.... 15 60 rms, cs... ails, pkgs. on, pkgs... cloth, cse Guns, cee.... Mf. iron, pkgs Fank Revolvers, cs. Cartridges, cs Mf. iron, pkgs Cutlery, cs... Windless W. ma., cs. Hdw., pkgs... Wire gds., cs. Wringers, cs.. Dutlery, cse.. Cutlery, or Windlass... Still, bxs... Guns, bxs. 9,391

Scales, pkgs.. 150 2,880 Clocks, cs.... 62 1,175 luns, bxs... Nails, pkgs. Pumps, pkgs.
I. r. gds., cs...
Iron safe...
Zinc, casks...
Tin, box....
A'munition,cs
Springs, bdls. Konigsberg. Ptlm., gals. 198,834 15,000 Brindisi. Pumps, pkgs. 3

PHILADELPHIA.

Office of The Iron Age, 22c South Fourth st., PHILADELPHIA, April 18, 1882. Pig Iron.—In some respects the market ooks better; there has been more inquiry, and for choice brands a more active demand. There has not been enough buying to warrant the assertion that there has been any positive improvement, although the feeling is better and the outlook is more favorable. Inquiries have been numerous, and if a fair proportion of them lead to business, our next report will, probably, announce positive improvement. Recent experience deters us from reporting improvement based merely on inquiries. Lots of 500 tons asked for have dwindled down to 50 or 100 tons when the order was sent in, and there is no posi-tive evidence that consumers have more con-fidence to-day than they had a few weeks ago, elthough it is likely that their require-ments are larger. On this presumption holders are less inclined to make con-cessions; choice brands, in fact, are a shade firmer. It is noticeable that 324 85 39 when a purchase is made, delivery is wanted immediately; in fact, those who are not in urgent need seem to stay out of the market altogether. From this it is inferred that stocks are low, and that the demand in the immediate future must be active, unless consumption falls off most unexpectedly consumption falls off most unexpectedly. Nearly all the leading furnaces are bare of stock, and, so far as we can learn, there are none that are particularly overloaded. The unwillingness to place orders for forward delivery is the chief cause of uneasiness, especially to those who have no regular trade, and to make sure of business, concessions can be hed among this class. he proc the sions can be had among this class; hence the disparity in prices. Choice brands of No. 1 Foundry have been sold during the week quite freely at \$27 delivered, while others have been hard to move at \$25 @ \$25.50. The majority of transactions have been at about \$26 for good Lehigh Irons, but as we have indicated, there is a wide margin in prices, according to brand, stock on hand or necessity to realize. Mill Irons may be considered in very much the same condition as Foundry Irons, although prices are rather more uniform, the range being from \$22 @ \$23 at furnace. Supplies are very moderate, and for good Neutral Irons it is impossible. to obtain concessions, although Irons with a cold-short tendency can be had at pretty low prices. White and Mottled Irons are someprices. White and Mottled Irons are somewhat irregular, with sales reported at prices varying from \$20 @ \$21.50 delivered. On the whole, business has been somewhat encouraging, and in spite of irregularity and the occassional development of weak spots, the average condition may be considered im-

proved, as compared with the position a week ago. Prices at furnace range from \$23.50 @ \$25.50 for No. 1 Foundry; \$22.50 @ \$23 for No. 2; \$22 @ \$23 for Gray Forge 4 \$20 @ \$21 for Mottled, and \$19 @ \$19.50 for White White. Foreign Iron.-There has been some inquiry for Bessemer Iron, and at least one transaction closed for nearly 20,000 tons. transaction closed for nearly 20,000 tons. Prices are hard to quote, owing to the uncertainty in freights. Prompt shipments would probably command \$25 or over, while lower figures are accepted for deferred shipments, according to what estimate is made in regard to freights. The question of cost depends almost entirely upon freights. Iron can be bought at a fixed price for almost any delivery, but charters have to be left. any delivery, but charters have to be left open or engaged at almost prohibitory rates. It is possible that offers of \$24 may be accepted for fall shipments, although, as we have already said, about \$25 is the usual asking rate. A sale of 1000 tons Spiegeleisen was made a day or two ago for \$37.50 (for 20 1), with further inquiry for lots at about same price. Scotch Iron is selling in a retail way at about \$25 for Gartsherrie, and Eglinton No. 3 at \$20.50 @ \$21. Middlesboro' Iron is dull and nominal at \$21.50 @ \$22; nothing doing.

Muck Bars.—The market is very dull and buyers hard to find at any price. There are sellers at \$42 @ \$43, but no large lots can be moved, even at the inside figure, so that quotations are almost nominal.

Blooms.-There is a fair demand at un-Blooms.—There is a fair demand at unchanged prices. Concessions may be had for large lots, probably, but, as a rule, sellers ask as follows: Charcoal Blooms, \$75; Run-out Anthracite, \$62.50 @ \$65; Scrap Blooms, \$55, and Northern Ore Blooms, \$50.

Bar Irons.—There is but little to report in this department, orders being few and quantity called for insignificant, as compared with business a few weeks ago. It is diffi-cult to account for such a complete change as the trade is now undergoing. Consump-tion shows no perceptible falling off, but new orders are scarce and buyers afraid to place an order, unless in immediate need of stock. Under these circumstances, prices are irregular and uncertain, with a decided downward tendency. In case of a good order being offered, there is little doubt that 2.7¢ would be accepted, although 2.8¢ is still the nominal rate. An improved demand may be looked for at an early date unless these is accepted to the control of there is a considerable falling off in consumption, of which there are no immediate indi cations. The impoverished condition of order books at the mills, however, will probably lead to sharp competition for new business so that the prospect of better prices is some-what remote. There has been a good deal what remote. of inquiry for Skelp Iron, but we have not heard of any sales, asking prices being about 2.75¢ @ 2.85¢, which seems to be beyond buyers' ideas.

Structural Iron .- There is no change in this department; the amount of new business entered is fair, enabling manufacturers to maintain prices and keep their capacity fully engaged. Bridge and ship builders are consuming very heavily, and on the whole the outlook is perfectly satisfactory. Prices are about as last quoted, viz.: Angles, 3¢ @ 3.15¢; Beams, 4¢; Channels, 4.2¢; Tees, 4.3¢; and about 3¢ @ 3.2¢ for Bridge Plate. Plate and Tank Iron.—The demand

is only moderate, but prices are without im-portant change. The mills are pretty well employed on contract work, but there is a good deal of anxiety to secure new business, good deal of anxiety to secure new business, 458 458 and desirable orders would probably be taken at some reduction on asking rates, which are about as follows: 3¢@ 3.25¢ for Tank Iron; 354 3.5¢@ 3.7¢ for Refined; 3.75¢@ 4¢ for Shell; 5¢@ 5.25¢ for Flange; and 6¢@ 130 6.25¢ for Fire-box. 62.

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Wrought Iron Pipe.—Prices are weak and irregular at 40 % discount for Boiler Tubes, and 60 % for Gas and Steam Pipe.

Steel Rails .- The downward tendency, so frequently mentioned of late, has at last culminated in a decided medification of quo-tations. An order for 20,000 tons has been placed at a very low figure (understood to be \$50 at mill) and small lots are now available at \$53 @ \$55. A somewhat larger business is looked for now that values have been fixed, and a good many orders are likely to come on the market, say at prices ranging from \$52 @ \$53, and probably \$50 for such lots as above referred to. A difference of \$2 or \$3 in price can easily be made, according to quantity, time of delivery and terms of payment.

Steel Blooms.—There is some inquiry, but in the present condition of the Steel Rail trade it is scarcely likely that any business can be done. Sellers ask \$42, duty paid, for prompt shipments.

Iron Rails.—No large sales are reported, but there is a fair demand for small lots at prices varying from \$47 to \$51, according to weight and pattern of Rail.

Old Rails.—No business whatever in spot lots, although \$28 @ \$28.50 would probably be accepted if the offer was made. Double Heads are offered at \$29, Baltimore

Spikes—Are in fair demand at about 3¢; Fish Plates, 2.5¢.

Crop Ends.—There is some inquiry, and

PITTSBURGH.

Office of The Iron Age. 77 Fourth Avenue, Privisusan, Pa., April 18, 1882.

The situation as regards the general Iron trade is not as satisfactory as it was generally expected it would be at this time, unforeseen events having transpired which have disappointed the hopes of the more sanguine, but the outlook is still favorable for at least an average business. The crop reports are but the outlook is still favorable for at least an average business. The crop reports are generally favorable; here and there the wheat crop has been damaged by the recent cold snap, but with this exception the out-look is encouraging for a bountful harvest. Moreover, the high price for all kinds of grain will no doubt cause an increased acre-age to be planted this year of spring wheat, corn and oats, and with good crop, all kinds of business will be stimulated.

The action of the Amalgamated Iron As-

corn and oats, and with good crop, all kinds of business will be stimulated.

The action of the Amalgamated Iron Association, at its meeting on Saturday last, to demand an advance of about 15 per cent. in the scale of wages for the next year, was generally unexpected, coming as it does with a general lull in the iron business. However, it is simply a proposition which the committee on the part of the Amalgamated Association is authorized to suggest and advocate at the conference with the mill owners. It is very certain that the mill owners will oppose the advance, and it is possible that the Amalgamated Association, after making a more thorough investigation into the present condition of the iron trade, will consent to a renewal of existing rates, which mill owners claim is all that they are able to pay. It is sincerely to be hoped that the matter will be amicably adjusted, and there is good reason to believe that it will be.

Pig Iron.—There has been a moderate

Pig Iron.—There has been a moderate business during the past week—all that can reasonably be expected under existing circumstances. Sales of some 2500 tons Native cumstances. Sales of some 2500 tons Native Ore Forge Iron at \$24.75 @ \$25, 4 mos., mostly at \$25. A small lot of Open Forge brought \$25.50. Foundry grades ranging from \$26.50 @ \$28 for Nos. 2 and 1. Bessemer Iron is nominal at \$28 @ \$29. Sales of Cold-blast Charcoal at \$38, cash. In view of what has already been stated, a lull in the demand for Finished Iron and the unsettled are sitted as a present every appearance of becoming at present every appearance of becoming condition of the labor question, business is all that can be expected, although the sales are mostly small, indicating that consumers are mostly small, indicating that consumers are buying only to supply immediate actual wants, and the probability is that this policy will be closely adhered to until the labor scale for the next year has been settled. Some few of the mills have sufficient raw material to last them until the 1st of June, but the majority will be required to buy more or less, both this month and next, in order to keep up mixtures, and a fair business is locked for in consequence.

Muck Bar—Continues very dull—more so than Pig Iron—and prices are weak and

Manufactured Iron.—The comparative dullness noted for some time past continues, and some few of the mills have changed from double to single turn. There is no question but what a good deal of the spring business was anticipated during the winter, which was an unusually open one. The demand for all kinds of railroad supplies has fallen off materially, and then the enhanced cost of labor and building material has caused the abandonment, for the present, of a great many contemplated improvements.

Sieke, '3¼ ¢ rates.

Steel.—We have nothing special to note in Tool, Machinery and Agricultural Steels. The market at present has a quiet tendency. We quote: Tool, 12¢; Machinery, O. H., 5½¢; Crucible Machinery, 7¢; Hammer, 2 inches and under, 8¢; over fallen off materially, and then the enhanced cost of labor and building material has caused the abandonment, for the present, of a great many contemplated improvements.

anticipation that prices may go still lower.

Nails.—There has been a decided improvement in the demand during the past week, and the factories, both here and at Wheeling, have about all they can do. Stocks in first hands are much less than at corresponding time last year, and the outlook is very promising for a good spring and summer trade. While we continue to quote card rates, they are not in all cases being realized. It is rumored that Wheeling makers have been "cutting," more or less, for some weeks, and our manufacturers have been obliged to do likewise. The improved demand, however, to which reference has been made, will no doubt stiffen up the market, and it is doubtful whether an order for a and it is doubtful whether an order for a large lot could now be placed under card rates.

Wrought Iron Pipe.—There is a fair and increasing business, and the indications are that all the pipe mills will be fully employed within the next few weeks. Prices unchanged; discounts on Gas and Steam Pipe, 60 @ 62½%; on Boiler Tubes, 42½ @ 45%. Oil-well Casing is quoted at 65 @ 67½¢ % foot, met, and ditto Tubing at 18 @ 20¢.

Ralls, &c.—The market here for Steel Rails, as elsewhere, continues dull, and in the absence of sales we omit quotations; our mills, however, are well supplied with orders, and are working up to their full capacity. Track supplies are comparatively quiet, but prices remain unchanged. Railway Spikes, 3.15¢ & keg, 30 days; Splice Bars, 2.50¢ @ 2.00¢; Track Bolts, 3.75¢ @ 4.10¢.

Steel.—There is a continued fair business; not so many new orders offering, but the

not so many new orders offering, but the mills generally appear to be fully employed. Prices unchanged.

Fish Plates, 2.5%.

Crop Ends.—There is some inquiry, and business pending on the basis of about \$25.50 for prompt shipments.

Scrap Iron.—The market is quiet, and prices somewhat easier than they were a week ago. No. I Wrought varies from \$20 @ 32, according to selection, Cast, \$20 @ \$21.

Nails.—Prices are very irregular, but \$3.30, net, appears to be the usual quotation. Stocks are light, and under ordinary circumstances better prices might be looked for at this season, but competition is unusually close. pared with what it was some years ago, which may be accounted for by the fact that Bessemer Iron has taken their place.

Window Glass.—The active season has not set in yet, but the indications are favorable for a good summer trade, and manufacturers are busily engaged in working up an assorted stock with which to meet the demand when it opens up. No change in card or discounts card or discounts.

card or discounts.

Coke.—This important and growing interest continues active; shipments out of the producing region estimated at from 60,000 to 70,000 tons per week. Makers are better prepared now to meet the demands made upon them at any time this year, owing to the fact that they are able to obtain transportation; for want of cars business was very much restricted during the greater part of the winter. Prices remain unchanged at \$1.75 @ \$2 \$2\$ ton, delivered free on cars at ovens.

CHICAGO.

Office of The Iron Age, 36 and 38 Clark Street, cor. Lake Street, CHICAGO, April 17, 1882.

material to last them until the life of June, but the majority will be required to buy more or less, both this month and next, in order to keep up mixtures, and a fair business is locked for in consequence.

Muck Bar—Continues very dull—more so than Pig Iron—and prices are weak and irregular. It is rumored that offers have been made to sell as low as \$39, delivered in Pittsburgh, but the best makes are held at \$42. There is a great difference in the quality of Muck, just as in the case of Pig Iron, and this accounts for the wide range in prices—\$39 @ \$42.

Manufactured Iron.—The market during the week has improved somewhat and orders are coming in more freely. We quote: Bar, 2.90¢ @ 3¢; Angle, 4¢; T, 4¼¢; Beams and Channels, 4¼¢ @ 4½¢; Hoop at 3.80¢ rates. Sheet, Plate and Tank, to 14 gauge, 3.80¢; 15 to 17 ditto, 4.10¢; 18 to 21 ditto, 4.40¢; 22 to 24 ditto, 4.60¢; 25 to 26 ditto, 4.80¢, and 27 ditto, 5¢. Patent Cold-rolled Shafting, dis. 20 \$; Norway Iron, Original Bars, 5¢ rates; Sheet, Plate and Tank, 100 to 14 gauge, 3.80¢; 15 to 17 ditto, 4.40¢; 22 to 24 ditto, 4.60¢; 25 to 26 ditto, 4.80¢, and 27 ditto, 5¢. Patent Cold-rolled Shafting, dis. 20 \$; Norway Iron, original Bars, 5¢ rates; Norway Iron, original Bars, 5¢ rates;

and soft Steel Center Flow, 10¾ €.

Serap Iron.—Quotations are lower and demand for all kinds exceedingly dull.

We quote (dealers' purchasing prices):

No. 1 Wrought Scrap, \$23, net ton; No. 1 Railroad Scrap, \$24 @ \$25; ditto Heavy Cast, \$18; ditto Stove Plate, \$12; ditto Cast-iron Borings, \$9 @ \$10, and ditto Machine Shop Turnings, \$12 @ \$13.

CHATTANOOGA.

Office of The Iron Age, Market and 8th Sts., CHATTANOGA, April 17, 1882.

Chartanooga, April 17, 1882. (
Spring trade seems to begin in a fitful, drizzling sort of way. There has been so much spring weather too early in the season, and so much apprehension of April and May winters, that business men have hesitated about fully entering upon real spring business. The same considerations have materially retarded building operations. The weather the past week has been cool, without frost or rain. out frost or rain.

out frost or rain.

Pig Iron.—The lower grades of Pig are more plentiful than for some time. Resales have practically slightly increased stocks. The larger output of foundry grades has stopped complaint as to scarcity, and the supply is now equal to the wants of the trade. Prices are not very strong, but there is not enough cutting to justify a change of quotations. We quote: No. 1 Foundry, \$24 @ \$25; No. 2 Foundry, \$22 @ \$23; Gray Forge, \$20 @ \$21; White and Mottled, \$19 @ \$20; Car-wheel Metal, \$33 @ \$37.

Oras.—We have nothing of interest to re-

Ores.—We have nothing of interest to report of the Ore market. We quote: 50 % Brown Hematite, \$\mathbb{P}\$ ton, \$2 @ \\$2.75; Red Fossil, \$2 @ \\$2.25, delivered at furnace.

Miscellaneous Articles.-Old Rails are steady at \$29; Wrought Scraps, \$20 @ \$23; Cast Scrap, \$13 @ \$15; Old Wheels, \$28 @

Nalls.—Dealers in this district are a little Naus.—Dealers in this district are a little curious to know why the Western Nail Association confirmed the \$3.40 card, when several mills belonging to that association were offering Nails, laid down at various inland Southern points, at \$3.30. We quote at \$3.30 rates, job lots, and usual discounts on large

Manufactured Iron.—Bar is steady at \$2.50 for large bills. The mills have all they can do to meet orders. Track fillings are steady. We quote: Railroad Spikes, \$3.40; Track Bolts, \$4; Fish Plate, \$3.

Coal.—We quote Fancy Lump, \$3.50; common, \$2.50; Run of Mine, at mills, \$2. Coke.—There has been no change for some months in the Coke market; but move-ments looking to material increase of the supply indicate a reduction at an early date. We quote: Furnace Coke, \$3 at point of con-sumption; Foundry, 10¢ @ 12¢ P bushel. Steel and Iron Rails.—Steel is fairly

quotable at about \$58 as an outside figure. Iron Bars, nominal, at \$48, Heavy Sections; Small T, \$53 @ \$55.

CINCINNATI.

APRIL 17.—Pig Iron.—The market in the past week has been very quiet, little or nothing done, further than filling orders for car lots. There seems to be a certainty that all consumers will be compelled to enter the market speedily for round lots, and it is generally known that willing sellers will be found to cover requirements, and at some concession in prices but only a ferrogram. cover requirements, and at some concession in prices, but only on Forge and the lower grades of Foundry. The late severe frosts have destroyed the fruit crops throughout Kentucky, Southern and Middle Ohio, Indiana, Illinois and Missouri, and the wheat and barley to an extent that is alarming, and they have brought manufacturers of every class to reconsider their enterprises for the future; they will hold their affairs in abeyance till further developments as to the actual extent of the disaster. Some of the railroad companies are already canceling The favorable weather of the past week has had a stimulating effect on general trade, and outdoor work is being prosecuted with ronewed vigor. The demand for Builder's Hardware is active, and the number of new buildings under contract unusually large.

Messra. Carmichael & Emmens have opened an establishment at Nos. 21, 23, 25 and 27 West Lake street, under the management of Mr. C. W. Davenport, formerly of Van Wilkle & Da

MESSRS. GEO. H. HULL & Co., Commission Merchants, report to us as follows, under date of April 15, 1882: There is considerable inquiry for Iron, and some sales have been made, but at prices that show considerable and the control of able reduction from prices asked last week. We have, accordingly, marked down quotations to agree with sales made. The following figures are for cash :

FOUNDRY IRONS.
No. 1 Hanging Rock, Charcoal \$27.00 @ 28.00
No. 1 Southern, Charcoal 25.00 @ 26.00
No. 1 Hanging Rock, Stonecoal and
Coke 85.02 @ 26.03
No. x Southern, Stonecoal and Coke 24 00 13 25.00
No. 2 46 82.50 @ 23.00
"American Scotch" 33.00 @ 24.00
Open eliver Gray
Close Silver Gray
MHLL IRONS.
No. 1 Charcoal

CAR WHEEL IRONS.

mer temperature, destroyed much fruit which, being a cash crop, is a bad beginning

HOT BLAST CHARCOAL.	
Missouri	26.00 @ 27.00
Ohio Southern.	28.00 (30.00
COAL AND COEE.	20.60 @ 37.00
Missouri	7
Routham	voue offering
Southern	80.00 M 20 50
Ohie	20,00 @ 27.00
MILL IRONS.	
Red-short	26.00 @
Neutral	24.00 (25.00
CAR WHEEL AND MALLEABLE I	
Missouri	98.00 @ 20.00
Southern	32.00 (37.00
Ohio	30.00 ₺ 38.00
Sheered and containing	

BALTIMORE.

W. N. WYETH, Iron and Steel Merchant, 46 and 48 South Charles street, reports us the following, under date of April 17, 1882: There is little or no change to note in this market for the past week; trade remains quiet, with shrinking values and accumulating stocks.

Ref. Bar Iron, 1 to 6 x 36 to 1 2 7-10 @ 2 9-10
" 1 to 41/2 x 1/4 to2 18 10 2 7-10 @ 2 9-100
" to a Round
and Square 9 10 2 7-10 @ 2 9-10
Hoop Iron, 11/4 wide and upward " 31/4 @ 31/6
Band Iron, from 14 to 4 in, wide " 3 6 346
Horse-shoe Iron " 334 @ 4 4
Norway Nail Rods " 516 @ 6 6
Black Diamond Cast Steel " 1314 @ 14146
Machinery Steel " 9 @ 956
Cast Spring Steel " 8 @ 836
Common Horse Nails "10 @ 14 6
Railroad spikes, 51/2 x 9-16 " 31/4 (4) 31/46
Perkins' Horse shoes Wkeg of 100 lbu\$4.87%
" Mule shoes 5.87-X
20/20

RICHMOND.

MR. ASA SNYDER, Iron Merchant and Fur-MR. ASA SNYDER, Iron Merchant and Furnace Agent, writes as follows under date of April 17, 1882: A quiet market may be quoted for the past week; special brands, however, are in good demand. Producers and consumers are watching the market closely, and opinions vary widely. We continue to quote prices as follows:

No. 1 Scotch Pig Iron	26,00 @	20.
No. 1 Authracite Pig Iron	27.00 @	3 29.0
No. 2 "	24.00 @	25.5
No. 3	@	23.5
No. 1 Virginia Coke Pig Iron		
No. 2		
140. 3	20.00 (23 0
Virginia Charcoal C. B. Wheel Iron	34.00 @	36.0
Old Rails	30.00 (U	38.0
Wrought Scrap, No. 1	20.00 @	28.0
Cast, Machinery Scrap	20,00	3 21.0
Refined Bar Iron	34 6	3.1
Horse Shoes (Tredegar)	@	4.0
Mule "	@	5.0
-		

are without feature, all recent prices being nominally maintained at about late rates, but with a great deal of underselling and cutting for the few orders now in the market.

are without feature, all recent prices being nominally maintained at about late rates, but with a great deal of underselling and cutting for the few orders now in the market.

SCOTCH PIG IRON

has been dull, and is now quite unstable on the basis of about 47/II for warrants and makers' brands, as given below. There are 107 furnaces in blast in Scotland (including mine on hematites) against 121 this date last year. To date this year the total shipments have been 135,170 tons, an increase of 24,282 tons. Last week they were 12,375 tons—a comparative increase of 115 tons. In Connal's stores there are 629,819 tons, as against 538,981 tons this date in 1881. Last week there was a decrease of 55 tons. The imports from Middlesboro' into Scotland this year to date have been 72,456 tons—a total increase of 4650 tons—a tons inc

been irregular this week, but lifeless, with not much fresh business doing, the transactions being mainly the operations of members of the trade. On Monday the warrant market opened flat, with business from 47/11 to 47/7½, cash, rallying afterward to 48/, cash. On Tuesday the price improved from 48/ to 48/5, closing at 48/3½ % to ... On Wednesday the market was firm, with transactions from 48/5½ to 43/8, and yesterday, after opening firm at 48/6 to 48/7½, cash, the market declined to 48/1 % ton. To-day the market has been quiet from 48/1 to 48/4, again receding to 47/10½, at which it closes sellers. The shipments last week were 12,375 tons, as compared with 12,262 tons for the coras compared with 12,262 tons for the cor-

tosbomenue.	TOOK OF	1000	your	. 4	404	uoto:
				No. 1	Ε.	No. 3.
G. M. B., at G	8520W.			. 40/		47/
Clyde,	4.6			. 50 0	3	49/
Coltness,	9.6			58		52/
Langloan.	0.6					53/6
Gartsherrie,	6.6			. 58/6	5	51/
Summerlee.	8.5			50/1		49/6
Calder,	6.6			. 57/3		51/
Carnbroe.	8.6			. 52 6	5	49/
Biengarnock,	at Ardro	ssan		. 12/6	5	48/6
Ealinton	6.5					47.
Daimeilington				. 49/		47/6
Shotts, at Leit	h			. 58/6	S	54/
Kimiell, at Bo	ness			. 48/		47/
Carron, at Gri	ingemot	ith		49/		47/6
The quotati	one of	John	TO S	Swan	R	Bros
				D 14 CETT	. 66	2100.9
Limited, agr	ee witt	the	se.			

CLEVELAND PIG IRON

is steady, but has been devoid of exceptional movements since I last wrote. The shipments and local consumption are very good, and the prospects of the district are regarded without apprehension Current prices of G. M. B., f. o. b. at makers' wharves in the Tees, are:

No. 1 Foundry 47/ Mottled 42/
1 2 1 45/6 White 41/6
1 3 1 43/6 Refined Metal 1
1 4 1 43/6 Kentledge 43/6 3 4 Forge.

The steel works are busy. From Erimus, crop ends are being sent to the United States; and, from Bolckow-Vaughan's Eston Works, steel rails are being shipped to your ports, as well as to Bombay and other Indian ports. The foundries and engineering works are fairly employed—some busy.

WEST COAST HEMATITES

west coast hematites
are featureless at the very low rates mentioned in these letters several times lately, as
well as in your cable dispatches. In some
quarters it is anticipated that the bottom has
been reached, but buyers are holding back in
the expectation of still lower prices, which seem improbable at the present values of ores, &c. I call average lots of Nos. 1, 2 and 3, 56/\$\tilde{\pi}\$ 57/6, and makers' brands:

	NO. 1.	No. 2.	NO. 3.
Cleator	64/6	641	63/6
Lonsdale	58/	57/	56/
Workington	58/	57/	56/
West Cumberland		0.00	
Lowther	58/	57/	56/
Moss Bay		***	
Distington	38/	57/	56/6
Harrington	58/	57/	56/
Bolway	58/	57/	56/
Maryport		57/	58/
Last week's shipm			tons of

pig iron and 6701 tons of steel rails. BRITISH BLAST FURNACES.

According to the Ironmonger returns, dated April 1, there are now 577 blast furnaces in operation in Great Britain, being a net increase of 18 since January 1, 1882. The total number built is 967, besides which there are 9 others in course of erection. By district for the forume are districts, &c., the figures are:

1	Built.	Idle.	At work
Scotland	148	40	108
Cleveland	159	49	130
Cumberland		2.1	43
Derbyshire	60	15	45
Gloucestershire		6	3.
Lincolnshire		4	2.4
Lancashire		14	35
Northamptonshire		9	17
North Staffordshire		13	26
South Staffordsbire		90	51
Shropshire		15	10
Somerset			E
Wiltshire		5	9
Yorkshire, West Riding		17	28
South Wales & Monmouth-			
shire		98	70
North Wales	XO.	4	6
	*******	1000.00	-
Totals	967	390	577

FREIGHTS

have again become rather stiffer, owing to the scarcity and low values of return freights from your ports. Pig Iron by ordinary steamer, Glasgow to New York, is the full 12/6, and Liverpool, Tees, Tyne and Barrow, 12/ and upward. Mr. Frederick Edwards gives me the following information as to rates from the Bristol Channel ports: "At the early part of the past month freights to the Northern ports appeared somewhat easier, tonnage being procured by outside steamers at from 16/ to 16/6, and also the Liverpool berth rates were, I understand, considerably reduced, but later on in stand, considerably reduced, but later on in the month the advices from the other side, the month the advices from the other side, being of such a discouraging nature, have strengthened the outward quotations for outside tonnage. In fact, the cable advices received on the 27th show the homeward market to be worse than it has been at all, and I cannot see anything to warrant outward freghts being lower for some time. This will, no doubt, restrict business to the States to a very great extent, reducing transactions in Iron, &c., to a minimum. To the Southern ports, New Orleans, G alveston, &c., freights have been maintained at a very high rate, 30/ having been paid for Galveston, with 23/ for New Orleans, for full cargoes of Rails. San Francisco in the early days of the month was very firm, 20/ having been paid for one or two ships,

o New Yo																
Rails, to	D.S					 	۰		0 1							£20.3
Tin plate	s, boxe	165												٠		127.616
Tin plate	s, bunc	lle	s.			 		0 0								- 4,825
Spiegel, 1	ons															X.40A
Besseme	r bloom	8,	24	OL	18											4,064
Bessemer Crop end	s, tons.									0	0			۰		320
Fig Iron,	tons				0 0		0 1	- 0		 						7 2,017
Scrap iro	n, tons.														0	10 288
Sheet iro	n. Lund	le	G.													2.2

Bars of iron									0	-				۰	0					0	E,41
Ingots of tin														ņ	0	0	0 1	 			6,00
To Philadelchia-	-€	re	OF	. 6	e II	te	18		U	Di	18	В.	0				0 0			0	1,00
To New Orleans-	-F	a	ilı	ß,	t	0	n	8			0 1			0	0	0		 			1,13
To Galveston-R	ail	g.	t	0	ns	3.														0	43
To San Francisco)—	R	a	il	6,	t	0	n	8.	×				×	×					*	60
The totals thus	a	re	3																		
Rails, tons																					3,21
Tin plates, boxes													×								127,61
Wire, bundles							х.						×					*	*	*	4,82
Spiegel, tons																					
Blooms, tons																			0		4,06
Crop ends, tons			٠.												. ,	. ,			×	×	1,32
Pig iron, tons																					2,61
Scrap iron, tons.									0				0							0	28

THE LEADING AGRICULTURAL SHOWS of the forthcoming season have now had their dates and localities fixed. I select a few of the principal fixtures for the information of such of your implement, pump, &c., manufacturers as may desire to exhibit

Society or show.	Place of show.	Date.	Entries close
Bath and West of England	Cardiff	June 2	April 19.
Royal Countles		June 27, &c.	May 13.
Northeast of Ireland	Belfast	June 22, &c.	May 13.
Royal of Eng-	Reading	July 10, &c.	July 1.
Highland		July 25	June 1.
	Sleaford	July 19, &c.	June 12.
Royal Manches-	Halifax	Aug. 1, &c.	June 24.
	Preston	Sept. 5, &c.	Aug. 1.
Birmingham		Nov. 25, &c. Dec. 4, &c.	Oct. 2.

The Royal Society of Ireland will have no show this year.

THE TIN PLATE TRADE

would now seem to be in a fair way of redressing its grievances, or, at all events, of "working out its own salvation" to use a sanctimonious phrase in relation to an extremely prosaic matter. I have already quoted several opinions bearing upon the industry, to which I may add that a very large meeting of manufacturers was held at Swansea on Thursday. The chairman of the Tin Plate Manufacturers' Association (Mr. P. W. Flower, of Neath) presided, and among the 51 works represented were many leading makers, including Mr. James Spence and others who have long advocated the proper others who have long advocated the proper and efficient regulation of the make. After and emceent regulation of the make. After some discussion, resolutions were carried de-claring it necessary to effect a restriction of the present rate of production, and appointing a council, or committee, to regulate the supply in accordance with the demand. As a means of maintaining and carrying out these resolutions an agreement was signed by the majority of those present (owning 144 mills) majority or those present (owning 144 mile) and has since been sent to those not present for their signatures. The chief clause of this agreement enforces a stoppage of all the mills one week out of every four during April, May and June, leaving the council to decide what restriction, if any, may be necessary thereafter. A penalty is to be imposed upon those makers who violate the letter, or the spirit, of the agreement, and, I sm told, will be enforced by a common deposit in advance. This is about all the information that has This is about all the information that has been permitted to transpire in respect of the gathering, which has had better results than had been anticipated. Whether those not present will fall in with the arrangement remains to be seen. Progress will be re-ported, in all probability, at the quarterly meeting of the trade to be held at Birming-ham on Wednesday, April 12. It is believed that the reduced make will be carried out, in which case prices may be considered to have reached the minima—indeed, a recovery is already in progress. Common I. C. cokes have improved to 16/or 16/3 \$\mathcal{B}\$ box, and more strongly held by both makers and

SOME CURRENT PRICES,

as appended, are taken from the circular of a large firm here :

	-	Pri	00.	Disc't
	£	8.	d.	-
Conner shoots .w. ner ton		5 0		25
Copper sheets, 4x4, per ton				350
Copper sheeting, per ton				25
Yellow metal sheets, 4x4, per Ib	1 0			
Yellow sheathing, per lb				2%
Wallaroo copper, per ton	79		0	9%
Chili copper, per ton	64			81/2
Best selected ingot, per ton			0	8 79
Brass wire, per fb	0		7	2 1/2
Copper wire, per D	0	0	9.	236
Composition nails, per b	0	0	714	23/2
Copper tubes, per m			974	3 1/2
Brass tudes, der ID	0		9	3%
Sheet zinc, best brands, per ton		10	0	21/2
Hard spelter, per ton	E	10	0	Net.
Soft spelter, per ton	17	TO	0	Not.
Straits tin. perton	IIO	0	0	Not.
English tin, in ingots, per ton	113	0	0	11/4
Galvanized sheet iron, 18 & 20 G			1	
	13	10	0	21/2
Palvanized sheet iron, 24 G, per	-			
ton	24	10	0	#36
falvanized sheet iron, 26 G in			-	-/-
felted cases, per ton	x8	5	0	21/6
as tubes, Black	Lis	t pr	ices	208 21/2
Fas tubes, Galvanized	Lis	t ni	ices	70821/2 55821/2
ras tunes, traivamirou	E	17	6	3
Quicksliver, per bottle	3	16	6	
in plates, IC coke, per box		40	-	3
in plates, IC coke, tin-lined,	-		6	
per box		17	6	256
cube nickel, per D		3		
erman silver sheets, per D	0	X	8	272
bright iron wire, No. 11, per ton		15		256
encing wire, o to 6, per ton	10	0		256
Vire nails, o to 7, per cwt		EO	5	214
lamboo steel, 5% up, per ton	XX	IO	0	2/8
legulus of antimony, per ton	59	0	0	#35g
ead. L. B. pigs, per ton	15	0	0	#3/2
ead sheets, per ton	15	5	0	m 1/2
ead nine mer ton	15			21/2
end shot, per ton	17	EO	0	83%
ead shot, per ton Vhite lead (Genuine dry), per				
ton	10	TO	0	5
ted lead (Dry), per ton	10	5	0	256
ronNailrods, per ton	7	5	0	81/2
Swedish hammered bars, per				
ton	10	5	0	236
Old holler plates per ton		2	6	Not.
Old boiler plates, per ton			6	Net.
Old wire rope, per ton			~	4100
Old horse shoos (packed), per		-	~ 1	Net.
ton Belgian bars, No. 1, per ton		5	0	
Belgian bars, No. 1, per ton	5		0	276
Beigian Naurode, No.1, per tou	5		0	236
Anchors, per cwt	0		0	236
Chain, per cwt	0	10	6	21/2

WILLIAM JESSOP & SONS, LIMITED.

The meeting of the shareholders of this well-known Sheffield steel company last week passed off most pleasantly, there being little room for discontent with a dividend of fittle room for discontent with a dividend of £9.3 4 per cent. for the year, free of income tax. Mr. Thomas Jessop, who is growing old. was not able to be present, owing to a cold. Mr. Hall, one of the directors, in seconding a motion for the adoption of the report, said they were no doubt aware that "the present presents of the conservation." come tax. Mr. Thomas Jessop, who is growing old, was not able to be present, owing to a cold. Mr. Hall, one of the directors, in seconding a motion for the adoption of the report, said they were no doubt aware that "the present prosperity of the concern was owing to the improved state of trade in America. A few years ago it looked as if the Sheffield manufacturers would never get to hold off, for the moment, until the situation that the standard of the superintendent, who will determine dimensions and conditions.

(Austrian Trade Journal.)

(Austrian Stanch Champania (Austrian Insue Champania (Austrian Insue

a chance again, owing to hostile tariffs, &c. but he was glad to find that the American demand had again revived, particularly for steels of the finest qualities, and Messre. William Jessop & Sons v their own." How's that? ns were able to hold

SANDERSON BROS. & CO. (LIMITED),

of Sheffield, coupled with the amalgamated firm of Samuel Newbould & Co. (Limited), firm of Samuel Newbould & Co. (Limited), saw, file, steel, &c., manufacturers, held their annual meeting on Wednesday last. A dividend of 5 % was declared upon the English capital of Sanderson Brothers and upon the entire capital of S. Newbould & Co. The balance sheet for Sanderson Bros.' American establishment, at Syracuse, N. Y., was not received and will not be ready until July. presented and will not be ready until July. You will remember that Sanderson's took over the works at Syracuse some five or six years ago in order to maintain their American business in steel, files, &c.

FOREIGN.

FRANCE.

(Moniteur des Interets Materiels.)

PRANCE.

(Moniteur des Interets Matereis.)

Paais, April 2, 1832.—Metals.—Although crop prospects are tolerably good, business is still, to some extent, restricted by the precaution exercised by banks in point of dissounts and credits. Metals have been moderately active, while Copper improved slightly. Tin has yielded; Lead is lower, and Speltor tolerably well sustained. We quote: Copper.—Chili Bars, 167.50 grs. 59; Ingots and Slabs, 177.50; Best Selected, 186, and pure Corocoro Ore, 170. Tin.—Banoa, 297.50; Billiton, 295; Straits and Australian, 296, and English, 287, 50. Lead, 26 @ 37; and Spelter, 46.35 et 45.75. Fron.—Dealers in this city sustain prices of Morchant well at 21.50, and Flooring at 22.50, with a deduction of 50¢ on large lots. Paris paid city dues hast year on 49,550 tons of Merchant Iron, against 45,530 in 1880, and 42.451 tons Pig, against 33,534. There is an abatement in the demand for Old Rails, now easily obtainable at 12.50; this figure is still liable to recede a little, since Old Rails are still ten dear as compared with Scrap Iron. At St. Deizier the orders dropping in are in excess of the current output. They quote Coke, Merchant, at @ 21.50, and Machine Mixed, 22 @ 22.50. Wire of all sorts is doing well in the district. Axle makers in the Haute-Marne basin have raised their prices slightly to 25 francs, and turned ditto to 34. This article had remained backward, and now gradually rises to the level of other goods, the more so as the Chamonilley Works have suspended operations in the line. The general outlook in France is reassuring, especially at this center, where an extraordinary amount of building is going on, while all over the country railroad construction will be activa. We do not, however, believe in higher prices. The better feeling in Scotland and Belgium latterly has cheered up the Iron trade in this vicinity. Building this year at Faris will be by entire blocks of houses. Coal.—While Coal for workshops is well upheld in price, that for domestic use is pretty much nominal.

BELGIUS.

RELIGIUM.

(Revue Universelle.)

BRUSSELS. April 2, 1882.—Iron.—For the moment our larger works still receive orders enough to keep them busy; it is to be hoped that this may continue so throughout the summer months. The less important concerns, being less favored, sell at times even below 14 francs. No. 1 Merchant Iron; but this still pays the rolling mills, since they can buy Pig at 6.50 6.75. Prices, though nominally showing no giving way in March, have on the average not ranged as high as in February. We quote to-day, Merchant No. 1, 13.50 6 14 francs, with 1 franc difference between numbers; Beams, 15; Corners, 15, 50; Sheels No. 2, 19.50; No. 3, 15.50; No. 4, 29.30; Steel Rails, 17.50; ditto Hoops, 23.50, and ditto Axles, 4.50. On taking a general view of the situation, it cannot be denied that there is a good deal of restlessness about the future, which the larger orders for Netherland India, &c. alluded to nour last, have not been able to dispet; hence the prospect is not as cheerful as it began to be the previous week. This is to some extent due, perhaps, to less favorable accounts coming from Germany in all March. At any rate, both the rolling mills and blast furnaces, with the exception of a few leading concerns, would be glad to see a steadier stream of orders pour in upon them, so as to feel a little surer of the summer season now drawing near, usually the reverse of brisk. Spring trade has been, to a considerable extent, a downright failure in Western Europe so far, and this is, of course, also felt in the Iron branch, though perhaps less than in many others. The remarkable drought on the Continent has had something to do with it, though less so than the precautions engendered by the January panie. Coal—la firmer, and there is an improvement of 25 centimes, both in industrial Coal and household. Coas commands 18 francs. (Revue Universelle.)

Hamburg. April 4, 1882.—Iron.—Our Dortmund correspondent expresses himself to the following effect: "The Iron situation may be put down as a highly unsatisfactory one. Complaints multiply, and the consequences of the financial disturbance in January now, after all, make themselves felt more than people were inclined to suppose would be the case in February. The weakness in this vicinity was first inaugurated in the Siegerland; it now even spreads to this district. One thing is certain—i. e., that if not soon a turn for the better occurs, the next large contracts with blast furnaces—existing ones expiring, most of them, on July 1 next—will be at a considerably lower range, the more so as new furnaces continue to spring from the ground like mushrooms, and overproduction will, in a short time from now, begin to stare us in the face. The rolling mills now also feel the effect of the uneasy feeling. Few orders are received by them, and as agood many former contracts are backed out of on some plea, a few of them do not feel comfortable, by any means, although they may still have secured work for several months to come. Makers of thin Sheets, in particular, complain of growing duliness, but even Merchant Iron begins to flag, while for coarse Sheets for boliers and locomotives there continues a good demand; indeed, only quite recently the inquiry for thick Sheets was so urgent that we had to go to Belgium to fill part of the orders. A brisk business continues to be transacted in the Steel works, the hardware factories, the axle and car-wheel shops, and the locomotive and car works; in fact, it is railway material which keeps us alive, and we are glad to asy that this branch, at least, will not give out in a hurry. Consequently, although the cloud overhanging us is dark, there is a silver lining to it in this respect. Merchant Iron maintains the basis of 135 marks. Coal.—The tendency is weak all round." In the Moselle and Sarre region, blast furnaces are without interruption busily engaged, but in the rolling mill branc (Borsenhalle.)

AUSTRIA. (Austrian Trade Journal.)

mer. Iron importation has been more extensive latterly; on the one hand because the revival here encouraged it, and on the other because certain kinds of Iron were procured from abroad in advance of the higher duty. So far, activity in the Iron and Steel branch in Austro-Hungary has been brisk enough to withstand all depressing influences of a similar nature; it will depend on the summer demand whether prices can be further sustained in the face of the weakness which is making headway in Germany. The crop yield among us, if abundant, will materially contribute to sustain the Iron situation; so far the prospect is good, but not brilliant. Iron has been quiet, at the ensuing quotations: Common Pig, at the works, \$56 \$6 forins \$\vec{v}\$ ton; Gray ditto, \$56 \$6 \$7; Bessemer, \$\$8 \$6 \$9\$; Merchant Iron, at Vienna, \$120 \$12\$; Bhoemian, \$100 \$115; Sheets for locksmiths, \$175 \$6 \$18\$; ditto for roofing, \$18\$ \$6 \$19\$; for boilers, \$175 \$6 \$18\$; for tanks, \$16\$ \$6 \$170\$; and Beams, \$120 \$122\$. Metals—have fluctuated more than the week before; they are steadier at the close: Copper, \$0 \$6 \$6 \$6\$; for in \$\vec{v}\$ rooks;; Tin, \$146 \$6 \$150\$; Lend, \$17.50 \$6 \$9\$; for in \$\vec{v}\$ rooks;; Tin, \$146 \$6 \$150\$; Lend, \$17.50 \$6 \$9\$; for in \$\vec{v}\$ rooks;; Tin, \$146 \$6 \$150\$; Lend, \$17.50 \$6 \$9\$; for fanks, \$150\$; and \$150\$; Lend, \$17.50 \$6 \$9\$; for in \$150\$; and \$150\$; and \$150\$; Lend, \$17.50 \$6 \$9\$; for \$150\$; and \$150\$; a

(Koch & Vlierboom.)

ROTTERDAM, April 1, 1882.—Ths.—The Netherland Trading Co.'s Banca sale of March 30 averaged 66 62/5 guilders \$\frac{9}{2}\$ so kg.; the day before the sale, both Banca and Billiton sold at 67 on the spot, and Billiton, July delivery, at 67.75.

(Weber & Co.)

(Weber & Co.)

VALPARAISO Feb. 15, 1832.—Copper.—The continual fluctuations in England have influenced our market comparatively little; there is little offering; at any rate holders are disinclined to submit to the lower parity which the English drop implies. Only after the exchange rose business was resumed, and 15,500 quintals soid at \$7,50 \$18.65, the former figure on shore and the latter on board. Nitrate.—Some 312.000 quintals soid at \$2.05 \$3.70 for 05 and 06 \$; there remaining little stock on hand on the 1st instant, the market righted, but a reaction soon occurred on lower cable quotations from Liverpool. Although the exchange quotations are better now the price remains the same. The Government has issued a decree offering for sale 1,000,000 tons of guano, tenders to be handed in within six months. Half of the proceeds the Peruvian bondholders are to get, the remaining half to accrue to Chili. Nitrate charters have amounted since the beginning of the month to 10,000 tons for Europe, and 4400 for the United States.

New England Manufacturers' and Mechanics' Institute.

As has been already announced, the sec ond annual exhibition of this association will take place in their building in Boston, from take place in their building in Boston, from September 6 until the end of October. Every indication points to a very full and interesting display, even superior to that of last year. We are informed that applications have already been received from several parties for space to exhibit entire processes of manufacture, on the plan of the boot and shoe making exhibit which attracted or much attention last year, and the manufacture. so much attention last year, and the manage-ment expect to make a selection which will be both interesting and instructive. The policy, which has been so successfully car-ried out, of making an exhibition of mechanical progress and invention, rather than a bazar, will be continued. The following are the rules governing exhibitors:

Rule 1.—All applications for space shall

rate 1.—An applications for space shall specify the ground space necessary, in shape and size, the hight of each article, the selling price thereof, and the peculiar merit or superiority claimed for it. If, however, the proposed exhibit consists of several articles which ought to be exhibited, and which it is desired to artibit as one whole then the desired to exhibit as one whole, then the whole collection shall be described as if it consisted of and constituted one article only, in which case the price may be omitted.

Rule 2.—No charge will be made for space Rule 2.—No charge will be made for space— Exhibitors must have their goods ready to ship by August 1, 1832. All goods coming by railroad will be delivered directly inside the exhibition building, if consigned to the "Institute Exhibition Building, care of Boston and Providence Railroad Company." Goods so consigned will unless the consignor inform the superintendent to the contrary, be unloaded from the cars on arrival and

placed upon their stands, for which service a reasonable charge will be made. Rule 3.—The building will be open for the reception of articles, from August 1 until September 1. All articles intended for exhibition shall be properly arranged, ready for exhibition on the evening preceding the first day of opening, or the space therefor shall be forfeited. The exhibition will be open to the public on Wednesday, September 6, and will continue open daily, from 9 o'clock, a. m., to 10 o'clock, p. m., during the entire months of September and October.

Rule 4.—The driving engines must be in operation one week previous to the opening.

operation one week previous to the opening of the exhibition to the public, September 6, 1882, and exhibitors of machinery in motion will be required to have their machin-ery in running order on the day of opening. order on the day of opening. ery in running order on the day of opening.

Rule 5.—All pulleys for the main line of
shafting must be split pulleys, if furnished
by exhibitors, must be accurately balanced, and must have the exhibitor's name plainly and must have the exhibitor's name plainly marked upon them, and should be received before the 30th of August, to enable them to be put in place on the shaft without unnecessary labor and inconvenience.

Rule 6.—No article on exhibition can be

removed from any department during the exposition without written authority; but but all appropriate facilities for making sales of articles for delivery at the close of the exhib-ition, will be afforded.

Rule 7.—An adequate police force will be in attendance upon the premises during the day and night; but all articles on exhibition will be at the risk of the owner. Insurance against loss by fire will be effected, in behalf of all exhibitors, who apply to the treasurer and pay for the same.

Rule 8.—No gas, steam or water pipes, or fixtures, shall be removed, altered, entered or disturbed, without the permission of the superintendent in writing being first obtained; and the superintendent will assess the damage or expense caused thereby, if any, which shall be paid by the exhibitor.

any, which shall be paid by the exhibitor.

Rule 9.—Permission for the erection of partitions, railings, platforms, &c., must be obtained of the superintendent, who will

INDUSTRIAL ITEMS.

MAINE.

The Auburn Foundry Co. have bargained for a piece of land near the Little Androscoggin, and propose to remove their works to that site and run by steam. The plan is to that site and run by steam. The plan is to erect large wooden buildings and put in a powerful steam engine. The Tobie & Clark Pump Manufacturing Company propose, also, to build at the same place. The pump business of this concern has grown to very large proportions. They made 2000 pumps last year, and will make 4000 the coming year. S and 10 per cent dividends have last year, and will make 4000 the coming year; 8 and 10 per cent. dividends have been paid on the stock, and the company have a large reserve. A third party also stands ready to build a shop and take power from the Foundry Company.

The fine new foundry and machine shop at Ellsworth, built on the site of Hopkins' Mill, is completed and ready for hydring Mill,

is completed and ready for business.

VERMONT.

The St. Albans Iron and Steel Works, started in 1875, now employ 175 hands, and the capacity of the works is 100 tons of rails per day. An open-grate furnace, making Siemens-Marten steel, is in operation, producing about 25 tons per day. Three-fourths of the steel rolled into rails is imported, the balance being made at the works. balance being made at the works

MASSACHUSETTS.

At Cambridgeport, Kendall & Roberts have just completed for the Bay State Gas Co. a 150-horse-power boiler, the fire-box of which is a hydrogen gas generator of the process of the company. This will be set up to furnish power in one of the largest electric light companies in Roston. ric light companies in Boston,

The McGee Furnace Co., of Leominster,

are about to increase their working force by puttting on 100 more hands.

The Lowell Card Clothing Co. are adding one machine a month to their capacity from their own machine shop, which is connected with their manufactory. They have furnished clothing for the 360 cards of the Ham-

itton Mill, just started here.

The Robinson Iron Co. are putting in a fourth furnace in their rolling mill at Plymouth.

CONNECTICUT.

The Southington Cutlery Company have The Southington Cutlery Company have begun the manufacture of razors. The company's other business is flourishing, and the 200 employees are kept busy full time in making all kinds of pocket cutlery.

The Hartford Engineering Company, Hartford, have new orders, which are crowding its works to their full capacity. Orders for their engines to the amount of over \$60,000 have been received within a week.

have been received within a week.

The "Wringer" manufactory in Middle

field is turning out about 25,000 Universal wringers weekly.

The Corbin Cabinet Lock Company, re-

cently organized, expect to have their new building ready by July 1. The Simonds Manufacturing Company, of Jersey City, have bought the foundry of S. E. Olmstead & Co., of Norwalk.

NEW YORK.

The Fletcher Furnace Company were com pelled to blow their furnace out on March 30th, on account of the lining having given out. They are relining at present, expect to blow in early next month.

NEW JERSEY.

Clinton Company, formerly at 1505 Penn-sylvania avenue, Philadelphia, Pa., are now located at corner Point and Pearl streets, Camden, and have increased their capacity very considerably. They make a specialty of J. Hammond Gray's patent revolving head screw machine, of which they are the sole manufacturers. They are at present fully employed, and will be for some little time, on orders they have booked. They also anticipate a good demand for their precialties. specialties. Atlantic and Pacific Electric Mfg. Co., Cam-

Atlantic and Pacific Electric Mfg. Co., Camden, have increased their facilities by the addition of a large planer and several other special tools. They have lately given an order for a 36-inch boring mill. Since the company was formed last summer they have been kept busy to the full extent of their capacity, and will be during the remainder of this year, on orders which they have on their books for 150 to 200 lamps. They are about to introduce a novel and patent electric lamp post. tric lamp post.

The H. B. Smith Machine Company are enlarging their store, 92 Market street, Philadelphia, making it 200 feet deep, to accom-odate their large stock woodworking machinery and machinists' tools.

Riehlé Bros. report business brisk, partic-

ularly upon their pa scales and testing machines. They are making a large testing machine for the Japanese Government, a 40-ton track scale for Stickney Iron Co., a 50-ton track scale and also other scales for the Pennsylvania Bolt and Nut Works. Charging scales have recently been delivered to the Akron Iron Company, Messrs. More & Marshall, New Straitsville,

Messrs. More & Marshall, New Straitsville, Ohio; Boyce, Wheeler & Co., West Middlesex, Pa.; Logan Iron Co., Logan, Pa.; Parrott Iron Works. New York; Gern Iron and Mining Co., Port Leyden, N. Y.; also the smaller scales in great variety.

Messrs. A. N. Downes & Co., New England Machinery and Boiler Depot, Philadelphia, whose works are situated at Lebanon, have been kept busy for some time past, and have a good many orders on their books which will keep them busy for some time to come. They make a specialty of boilers and also a belt pump and heater.

The Taylor Manufacturing Company, of Chambersburg, which propose to build locomotives, has been chartered, capital stock \$150,000; also the Wyoming Valley Coal Company, with a capital stock of \$1,200,000.

The principal office is at Wilkesbarre.

The principal office is at Wilkesbarre.

The Lehigh Iron Company are having stack No. 1 filled, and it will be put in blast immediately. This furnace has undergone extensive repairs since going out of blast about 10 weeks ago. It has been rebuilt and overhauled from top to bottom.

It is reported that a new company has been organized in Spring City to manufac-ture stoves, the Keeley Works having been

at the present time, for the city of Philadelphis, from 5 to 10 tons a day of water pipe having diameters of 36 inches, 30 inches and 6 inches, respectively. From 4000 to 5000 tons of this pipe have been made at this tons of this pipe have been made at this establishment during this season. Some 12 tons of the pipe will be shipped to its destination, 97 tons of the largest diameters having been already shipped. The contract will not be filled for several months yet. Mr. Thos. S. Baker, of Philadelphia, is the inspector at present stationed here. Three or four other foundries in other parts of the county are also engaged in manufacturing. county are also engaged in manufacturing pipe for the same parties. Samuel J. Creswell, of Philadelphia, has

Samuel J. Creswell, of Philadelphia, has been awarded the contract for the ast-iron work of the Lehigh Valley Railroad offices, at Mauch Chunk, and the large iron portices for the Swarthmore College, Delaware County, Pa.; also the stable fittings for the West Philadelphia and Lombard and South Street P. R. W. Co., in Philadelphia Philadelphia.

Stokes & Parrish, of Philadelphia, have recently taken an order from the Philadel-phia and Reading Coal and Iron Company for a new furnace heist for the Swede furnace. They have also taken a similar order from the Shenandoah Iron Company, for their furnace at Shenandoah, W. Va. They are very busy on hydraulic hoists, both freight and passenger, putting in three at the new building of R. D. Wood & Co., Fourth and Chestnut streets, besides numerous others in Philadelphia, as well as in Western and Southern cities.

PITTSBURGH AND VICINITY.

The iron works of Graff, Bennett & Co. at Millvale, are nearly ready to be operated in every department. The puddlers will resume work next Monday, and in the near future the entire force (667 men) will again

be employed.

We hear that the Edgar Thomson Steel
Works Co. have decided to build two additional furnaces, making seven in all. Manager Wm. R. Jones has withdrawn his resignation.

Thomas Coffin & Co. are shipping brick for

Thomas Coffin & Co. are shipping brick for W. Eliot Smith's new 14-pot Gill gas furnace, at Alton, Ill. This furnace will be for white prescription goods. Mr. Smith has three other open-pot furnaces, but this is the first gas furnace in his factory.

The Murraysville gas well has been sold to J. C. Polly, agent for a New York syndicate, for \$20,000. The new owners state that they purpose utilizing the gas at the Edgar Thomson Steel Works and the National Tube Works, and to this end have organized a commany with a capital stock of \$20,000.

company with a capital stock of \$500,000.
Witherow & Gordon are erecting three new hot-blast stoves for the No. 2 stack of the Isabella Furnace Company. The stoves are each 21 feet in diameter and 70 feet high, and will together contain 900,000 fire-brick, and probably about 200 tons of iron. The expense incurred in erecting such stoves by the Furnace Company will be great, but is undoubtedly justified when the results produced by a similar remodeling of the equipment of the No. 1 stack is considered. This stack made, with the new stoves which Messrs. Witherow & Gerdon furnished, 7321 gross tons in the six weeks ending April 1st. For the week ending at that time she made 1282 tons, and on March 30th and 31st, 24 hours, she made, respec-The expense incurred in erecting such stoves 30th and 31st, 24 hours, she made, respectively, 215 tons and 217½ tens. This product was made on 1.08 pounds of coke to 1 pound

The Pittsburgh Bridge Company have re-organized and applied for a charter.

VIRGINIA.

The Lynchburgh Foundry and Machine Company have been exempted from municipal taxation for 20 years, under the general ordinance of the city, which directs that all capital invested in enterprises of this character shall be encouraged in this way by protection from the ordinary burdens of taxater snall be encouraged in this way by protection from the ordinary burdens of taxation. The foundry, machine and boiler-shop buildings will soon be completed and the machinery in place, and work will begin at an early day.

Messrs. Witherow & Gordon, of Pittsburgh, Pa., have the contract for the entire function.

Messrs. Witherow & Gordon, of Pittsburgh, Pa., have the contract for the entire furnace plant of the Crozier Iron and Steel Co., at Roanoke. The furnace will be 17 x 70 feet, and will be supplemented by two 18 x 70 Whitwell stoves of the new type.

WEST VIRGINIA.

The Moundsville Council has confirmed the lease of a portion of the street north of the Kloman Mill to that company to be occupied by an extension of the building. Several carloads of ore were received at the rolling mill on Saturday. The Kloman Mill has had mill on Saturday. The Kloman Mill has had a barge built for carrying muck iron to Pittsburgh. Sheet-iron stacks for the new furnaces in course of erection at the Kloman Mill have been received. All of the old brick stacks at the mill will be torn and replaced by sheet-iron ones .- Wheeling Intelligencer.

OHIO.

It is reported that the Timms Car Works, Columbus, are in a fair way to be put upon a sound basis again. At a meeting of the creditors the liabilities were found to be only \$90,000, with assets between \$140,000 and \$150,000. The company have several

and \$150,000. The company have several large orders on hand and will continue working at its full capacity.

The Dayton Screw Company, Dayton, is now fully organized, with Mr. Albert G. Angell as president, and Mr. Samuel L. Worsley, superintendent. The works, which Worsley, superintendent. The works, which have been standing idle for several years, have been placed in complete running order, new and most approved machinery added. In a very short time they will be in

full operation.

The loss by the burning of the Powell Tool Company's forge at Cleveland, Sunday night, is now placed at \$25,000; insurance, \$11,000. One hundred and thirty men are thrown out

of employment.

The Diamond Glass Company, Urichsville, has been incorporated with a capital of \$40,000; also the Canton Paper Company,

Canton, with a capital of \$75,000.

Mast, Foos & Co., of Springfield, are very busy, and are about building an extension of 100 feet to their already large foundry.

They are melting now 8 to 10 tons of iron sold and removed.

At the Mellert Foundry and Machine Company, Reading, there is being manufactured pany, Reading, there is being manufactured They have recently shipped, to fill a large



After having made almost every kind of a Bit Brace and tried them on the market we find that our BARBER IMPROVED BRACE, as seen in this Cut, is the only one which we find that our BARBER IMPROVED BRACE, as seen in this Cut, is the only one which gives universal satisfaction. During the past six months we have made some slight changes on this Brace, which remove all objections to it and make it absolutely perfect. We are aware that other Braces are sold at a less price, but they are also made at a less cost. Everything which goes into the Barber Brace is of the best and most expensive quality, and one of them will outlast six of any other kind. The Sweeps and Jaws are of steel, the Head of lignumvitæ and Revolving Handle of rosswood. It is highly polished and heavily nickel plated. The Jaws will hold, without any fitting, Tool Shanks of every shape, including Round Twist Drills. When furnished with the Ratchet Attachment, for boring in places where the Sweep cannot be revolved, it is the only Brace which will answer that purpose. We have not changed the price for many years, and do not anticipate any change in the near future; but from year to year we have been adding to the quality so as to make the cost to us double what it was ten years ago. We have recently added to our manufacturing facilities, and are now prepared to supply the world with Braces.

LIST PRICES.

No. 10—14-inch Sweep, per dozen...\$33.00 No. 14— 6-inch Sweep, per dozen....\$21.00 No. 11—12-inch Sweep, per dozen.... 30.00 No. 31—12-inch Sweep, per dozen.... 30.00 No. 12—10-inch Sweep, per dozen.... 27.00 No. 32—10-inch Sweep, per dozen.... 36.00 No. 13— 8-inch Sweep, per dozen.... 24.00 No. 33— 8-inch Sweep, per dozen.... 33.00

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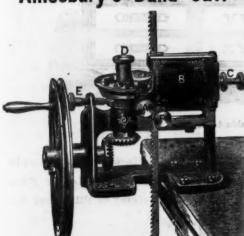
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Will Save its Cost in a Few Weeks.

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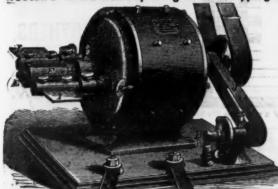
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Is sold at a price within the reach of svery one using a band saw. Reduced Price List.—Net price, including so files, ga; thin, corner an I facing files, per iosen, \$1.20; thick beyeled files, per iosen, \$1.20; thick beyeled files, per logen, \$1.20; thick beyeled files, per logen, \$1.20; thick beyeled files, per logen, \$1.20; Terms strictly cash.

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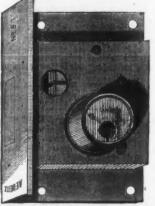
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NEW pattern Heavy Screw Games;
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HAY ELEVATORS, PULLEYS and GRAPPLES. Send for Circulars. Muney, Lyouming Co., Su

order for turbine water wheels, iron turbine wind engines and Buckeye force pumps, from Adelaide, South Australia, and are at this time preparing to fill a large order for same kinds of goods for Christ Church, New Zealand. Their trade in Europe and other foreign ports is rapidly increasing. The business of this company has doubled in the past year, and larger extension of capacity the cartridge receptacle and allows a free the cartridge receptacle and allows a free of their works is anticipated in the near

future.
Messrs. John H. McGowan Mfg. Co., of Cincinnati, have just filled several large orders for tobacco machines, shipped to several points West and South, and to Australia. Their works are running to their full capaci-ty upon tobacco machines and "Rival" pumps of various sizes. The business of this company has more than doubled in the past 12 months, and a very heavy business is ex-

pected this year.
Mr. Charles Gooch, manufacturer of ice Mr. Charles Gooch, manufacturer of recream freezers, Cincinnati, has just returned from a business trip, and brings with him some large orders for his goods. He is turning out from 350 to 400 freezers per day, and expects this season to largely increase these figures. He is shipping to all parts of the United States and Canada. Mr. Gooch's bill for castings for freezers of all sizes is a large item in the cost of his prosizes is a large item in the cost of his productions. These castings are made at the works of Messrs. Sohn & Reutschler, of

Hamilton, Ohio.

The American Revolving Screw and Bolt Case Company, at Dayton, are enlarging their business rapidly. They are making several sizes of these cases, suitable for retail trade or for machinists' use. The base or lower tiers of drawers are made large enough for 6 to 10 inch bolts, and the upper tiers are suitable for all sizes of screws. case is octagonal, or otherwise, and sits per pendicularly, revolving on a strong pivot. The drawers are arranged around the body of the cylinder. The face or front of each drawer is numbered for certain sizes of screws. For retailers of hardware they are very convenient, as all the numbers are brought in sight by turning the case upon its

The Tricycle Manufacturing Company, at Springfield, are preparing to place some new and very attractive goods upon the market this season, among which we may mention

this season, among which we may mention their children's tricycles and wheelbarrows, also farm and railroad barrows of superior quality of workmanship and material.

The business of the Lechner Mining-Machine Company, at Columbus, is gradually increasing. They are manufacturing chains of very superior quality, for use in place of leather belting, and have some good orders, which they are filling as rapidly as possible. Their mining machine is looked upon as a very valuable invention, and they expect large valuable invention, and they expect large orders for them this year.

ILLINOIS.

The Crane Bros. Mfg. Co. have established

They at once commenced repairs, and expect to be in running order very shortly.

Two of the Missouri furnaces have been

Ashland Furnace is making 400 tons of This letter caused considerable of a common per week, and is using phosphor-bronze motion among the workmen in Pittsburgh.

An Improved Automatic Fire Alarm and Fire Extinguisher.

had over 25 years' experience as a practical fireman in the New York and Brooklyn tical fireman in the New York and Brooklyn ing is by no means the sentiment of our good departments, some time since invented and puddler members, 'Union' allows his comreceived a patent for an automatic fire alarm munistic ideas to crop out, inasmuch as he and fire extinguisher, which we here illus-

mately causing the explosion of the cartridge. The force of the explosion will remove the metallic plug at the top of the apparatus, thus breaking the circuit and immediately sounding the alarm. At the same time the plug in the interior of the chamber having opening for the water to flow out and extin-guish the fire. When there is not sufficient water pressure to do this, a tank may be placed on the top of the building or a pump may be connected with the water pipes, forcing the water through the chamber in the immediate vicinity of the fire, the others remaining closed. By means of a suitably placed valve, the flow of water may be stopped when desired, and the usual damage lting from an excess of water may be wholly avoided. The apparatus seems to be



specially adapted for use in buildings located outside of city limits where there are no fire departments. A building 25 x 100 feet should have about 14 of these extinguishers on each floor, and we are informed that the complete outfit per floor, including electrical alarms, &c., would not exceed \$100. Mr. Smith's apparatus has been subjected to repeated tests which have in every case given highly gratifying results, and it will probably not be long before its peculiar advantages will be recognized and appreciated by the public, causing its more general introduction

Puddlers Wages at Pittsburgh.

In the Pittsburgh Commercial Gazette of the 12th a correspondent, over the signature of "Union," urges that puddlers were poorly paid, and that the meeting of the puddler's committee, which convened in Pittsburgh last Saturday, should demand additional wages. The correspondent said:

"It is an admitted fact in every iron district in this country that the puddlers per form more hard work than any other class of skilled workmen employed in a rolling mill, and for their services receive less pay. And also it is an undeniable fact that the In the Pittsburgh Commercial Gazette of

The Crane Bros. Mfg. Co. have established mills in Chicago for the manufacture of lap-welded wrought-iron pipe.

A new sheet mill has been erected by the Illinois Zinc Company, at Peru, which has a capacity of 30,000 pounds per day. They will employ 100 hands.

The National Wire Company have organized in Chicago to manufacture a four point barb wire, and are now ready for business.

The Pattee Flow Co., of Monmouth, are making a number of improvements at their works, which will cost, in all, about \$20,000.

The pattee Flow Co., of Monmouth, are four organization to answer this question, yes or no. We say 'No.' The puddlers are forced to work missrable iron—compelled to do the work which the blast furnaces should do. It is quantity, not quality, that these furnace masters push into market. The and the erection of a new pattern shop and four warehouses.

MISSOURI.

One of the shops of the Groom Shovel Company, of St. Louis, was partially destroyed by fire on the night of the 12th. They at once commenced repairs, and expect to be in running order very shortly. They are now repairing and expect to be in running order very shortly.

Two of the Missouri furnaces have been out for some time. They are now repairing and expect to blow in as soon as they are ready.

The Lindell Glass Company are building a large addition to their works.

Chouteau, Harrison & Vallé are running their Laclede mills double turn. Their payroll numbers over 600.

ALBAMA.

The hot-blast stoves for the Woodward Iron Company, referred to in a recent issue, are being built by Messrs. Witherow & Gordon, of Pittsburgh, Pa. The latter firm also have orders for three stoves for the Eureka Iron Company, at Oxmoor, and three for the Sloss Furnace Company, at Smoor, and three for year. Don't allow yourselves to be hoodwinked, intimidated or frightened. Demand winked, inti months. To do ourselves justice and make a good quality of iron we should have a suf-

tuyeres, which are giving great satisfaction.

EANTAIR.

The Fort Scott Foundry and Machine Works have nearly 100 hands employed, and are adding new and improved machinery.
They are now building concentration works of 50 tons per day capacity for the Heela Consolidated Silver Mining Company, at CHendale, Montana.

motion among the workmen in Pittsburgh. At first it was contended that the writer was not a member of the Association, but as he was of the Society of the Amalgamated, Mr. Martin, who is not a puddler, but a roller, we believe, answered it in the Labor Tribune. After giving the letter he says: "The above was published in the Commercial Gazette on Tuesday last, and instead of promulgating the principles and mottot that our society inculcates (united we stand), it will have a tendency to play upon the weaker have a tendency to play upon the weaker minds and engender hatred and eventuate in Mr. John W. Smith, of Brooklyn, who has

demoralization, and finally reach the point anxiously desired by our enemies—'divided we fall.'"

"In his article, which we are safe in say and fire extinguisher, which we here illustrate. The engraving represents one of a series of perforated chambers to be connected with supply pipes passing through each floor of a building. These chambers are provided with plugs, which prevent the water from entering, and which rest against a cartridge receptacle placed at the top of each chamber.

Each recent aging a light which be claims to be a member) and which which he claims to be a member) and which top of each chamber.

Each receptacle, besides containing a light cartridge connected with a fuse, is provided with a non-conducting ring, to which two half round metallic plates, with a metallic plug between, are attached, thus forming a complete electrical circuit. The circuit wires are designed to be connected with an alarm placed in the office or engine room of a factory, or in any place where it may be readily heard. Should a fire occur in the vicinity of the apparatus, a piece of raw cotton on the fuse would be ignited, ultimen be better equalized.' Such 'union' men as he, if they had the reins, would be the means of all the members getting an advance downwards for want of unity." It will be noticed that Mr. Martin does not

discuss the letter on the merits of the claim, which really are that the puddler does not, relatively to the amount and laboriousness of the work he does, get as good wages as the heater and roller. This is another example, however, that occasionally crops out of the internal dissensions that exist in the Amal-

LABOR AND WAGES.

Five glass-blowers at Tibby Brothers' fac-

Five glass-blowers at Tibby Brothers' factory, at Sharpsburg, Pa., who struck a few months ago on account of the employment of non-union men, have resumed work and forfeited their membership in the union.

Last Tuesday there was a meeting of the Pittsburgh, Wheeling and vicinity nail-plate rollers held in this city, for the purpose of fixing a scale to be presented the 1st of June. The Pittsburgh papers intimated that an advance of from 63 to 70 cents would be demanded. The members of this branch of the trade were very reticent the day of the meeting, and would venture no information. Last night a gentleman defined the situation as follows: Heretofore the Pittsburgh price has been 63 cents and the Wheeling price 50 has been 63 cents and the Wheeling price 50 cents, while muck rolling, nailing, and, in fact, all the other branches of the trade have paid in Wheeling as much, and in some cases a little more. The meeting of the rollers was for the purpose of making the price uniform in both cities.—Wheeling Intelli-

The drag-outs employed at Chess, Cook & Co.'s nail mill, Pittsburgh, have struck for an increase of 25 cents per day. They have been receiving \$1.75 per day.

an increase of 25 cents per day. They have been receiving \$1.75 per day.

About two weeks ago the heaters at the scrap furnace in the Clinton Mill, Pittsburgh, asked the firm to give them two helpers, one for the night turn and the other for the day turn. The proprietors refused the request and the heaters struck. A compromise has been effected, by the firm allowing the heaters to employ two heaters, the heaters to pay one-half of their wages and the company to pay the other half.

The hook-ups, drag-downs and straighteners at the bar mill in Clinton Iron Works, Pittsburgh, who struck for an advance of wages about two weeks ago, are still out. They were paid by the day (\$1.65), but they want to be paid by the ton. It has been rumored that this strike was ordered by the Amalgamated Association, but Mr. John Kelley, one of the vice-presidents of the association, states that the strikers do not belong to the association, and, of course, here a claim whaterer on it. The strikers belong to the association, and, of course, have no claim whatever on it. The strikers

want to be paid 16 cents a ton.
Some 40 of the striking miners at Banksville, near Pittsburgh, recently left the city
for England. They had been in this country only a short time, and had become homesick and wanted to get back to the mother

The laborers in the Clinton Mill, Pitts burgh, who heretofore have been required to work 11 hours a day, asked the proprietors to reduce their time to 10 hours. The men threatened to strike if their request was not complied with. The proprietors acceded to the demands of the men and they went to

The fillers employed at the blast furnaces about Wheeling are demanding an advance. At present \$1.75 per day is the figure, but \$1.90 is wanted.

\$1.90 is wanted.

A committee of nailers met in Wheeling and adopted a schedule of "lengths and weights" to be applied to their scale. Some other necessary alterations were made in the scale, and the same will be submitted to

avoided by certain engineering operati which are to be commenced in a short time.

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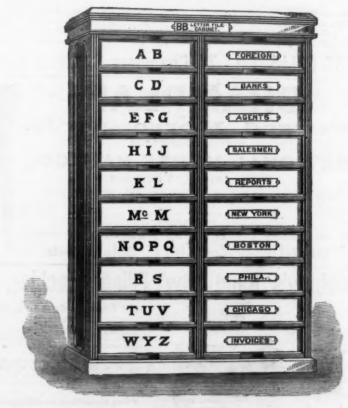
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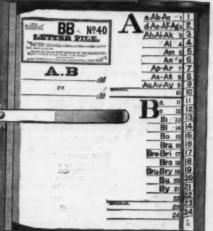


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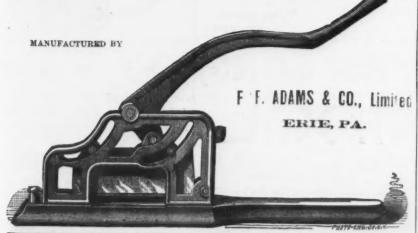
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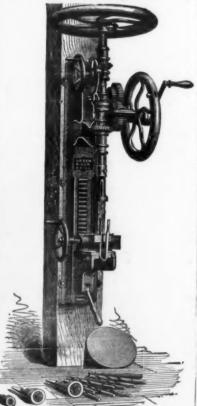
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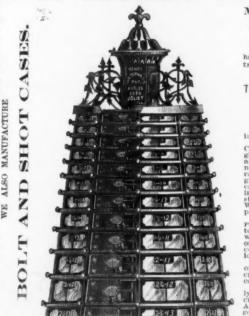
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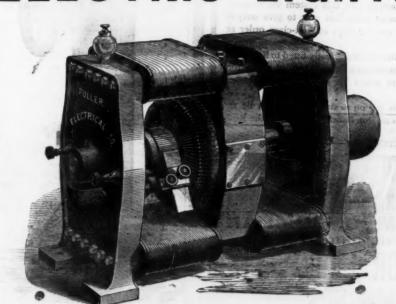
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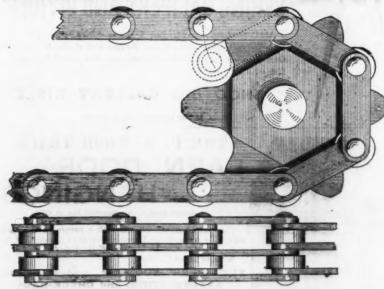
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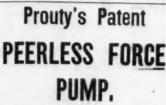
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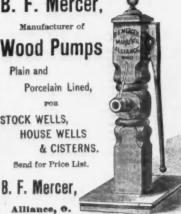
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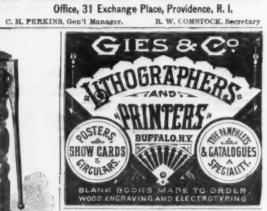
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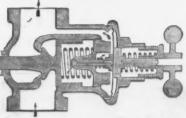
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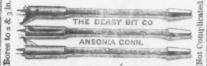
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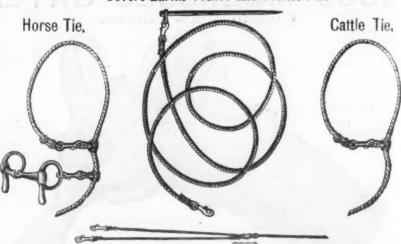
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PAGE Agricultural Implements. Grant Fan Mill and Cradle Co., Melrose, N. Y	Deoxidized Bronge. Philadelphia Smelting Co Ld., Philadelphia, Pa. 33 Olfferential Pulley Blecks. Yale Lock Mfg. Co., 43 Chambers, N. Y	Yale Lock Co., 63 Chambers, N. Y. Hooks (Cotton & Hale.) New York Handle & Mallet Works, 46 E. Houston, 12	17
Alr Cempressers. Alr Cempressers. Clayton Steam Pump Works, Brooklyn, N. Y	Yale Lock Mfg. Co., i3 Chambers, N. Y. Dog Cellurs. Medford Fancy Goods Co., of Duane, N. V.	Horse Clippers. Boker Hermann & Co., 101 & 103 Duane, N. Y32&39 Horse Hay Forks.	1 14
Air Pumps.	Yale Lock Mfg. Co., i3 Chambers, N. Y. 3 Dog Gollars. Medford Fancy Goods Co., o5 Duane, N. Y. 3 Discount Books and Tables. Jennings S. H., Deep River, Conn. Leigh E. B. St. Louis, Mo	Briser florman & Co., 101 & 103 Duane, N. Y., 32339 Horse Hay Forks, 25 Briden John, Muncy, Pa. 25 Briden Nalls, Makers of Bridgewater, Mass. 7 Easex Horse Kall Co., Troy N. Y. 25 P Nall Co., Cleveland, O. 32 P. Sall Co., Cleveland, O. 32 25 26 27 28 28 29 20 20 20 20 20 20 20 20 20	1
Aiarm Money Drawers. Fucker & Dorsey, Indianapolis, Ind	Pope & Stevens, 114 Chambers, N, Y	Essex Horse Nail Co., Troy, N. Y	17
Weindel H. Philadelphia Pa. 7 Alarm floney Drawers. Fucker & Dorsey Indianapolis. Ind. 10 Anti-Friction Metals. Anti-Friction Metals. Aliadelphia Smelting Co., Ld., Philadelphia, Pa. 33 rieeves Paul S., Philadelphia. 44 U. S. Smelting Works, Philadelphia, Pa. 15	nagar Joseph, Fore Chemer, N. 1. 13 Door Helts. Ives Hobart B., New Haven, Ct. Deor and Gate Springs. Devore L. M., FreeDort. III. 27 Keene Bros., Chicago, III. 35	Baranac Horse Naii Co., Plattaburg, N. Y	-
A HVIIII MENTER TO THE PARTY OF	Devore L. M., Freeport, Ill. 27 Keene Bros., Chicago, Ill. 35 Mohr, J. A. & Co., Manchester, Iowa.	Saranac Horse Nail Co., Plattaburg, N. Y	0
Fisher & Norris, Trenton, N. J. Arms and Ammunition. Alford, Ward, Davenport & Co., 77 Chambers, N. Y. S. CONWAY T. G., 38 Chambers, N. Y. II Eaton F. E., Chicago, III. Field Alfred & Co., 92 Chambers, N. Y. II Fartley & Graham, 17 Maiden Lane, N. Y. II Or Co., 12 Chambers, N. Y. II Or Co., 12 Chambers, N. Y. II Field Alfred & Co., 26 Chambers, N. Y. II Field Alfred & Co., 26 Chambers, N. Y. II Field Alfred & Co., 28 Chambers, N. Y. II Fiel	Devore L. M., Freeport. III	Het Blast Steves, Witherow & Gordon, Pittsburgh, Pa33	
Field Aifred & Co., 93 Chambers, N. Y	Peorless Punch and Shear Co., 115 W. Liberty, N.Y. Sellers Wm. & Co. Phila. and 70 Liberty st., N.Y. 43 N.Y. 43	McLean John, 300 Monroe, N. Y	
Hartley & Graham, 17 Maiden Lane, N. Y. Lovell John P. & Sons, Boston, Mass. 44 Remington E. & Sons, 28 Broadway, N. Y. Stevens J. & Co., Chicopee Falls, Mass. 30 Axles, Springs, &c., Manufacturers q. Cook R. & Sons, Winsted, Conn. 13 Lambertville Iron Works, Lambertville, N. J. 13 Lambertville Iron Works, Lambertville, N. J. 13	Sellers Wm. & Co, Phila, and 79 Liberty st., N.Y. 3 Sints Clark, Springfield, O Thorne, De Haven & Co, Philadelphia. 43 Wiley & Russeli Mfg. Co., Greenneld, Mass. 27	Averican Machine Co., 128 Chambers et. N. V. seen	
Cook R. & Sons. Winsted. Conn. 13 Lambertville Iron Works, Lambertville, N. J. 13 Wurster F. W., Brooklyn N. Y. 44	Eckel & Co., Richmand, Ind.	1ce Cream Freezers. American Machine Co., 128 Chambers st., N. Y.26&30 White Mountain Freezer Co., Laconia, N. H	1
Sprengle L. Jeff., Ashland, O	Enve Trough Hangers. Heartley & Demsey, Toledo, Ohio. 31 Edge Tools. Wakers of. Doscher M 85 Chambers. N. Y. 32	Jenks James Detroit Wish	
Shipherd John J., Cleveland, O	Egg Beaters. Standard Manufacturing Co., Boston, Mass Electric Light. Fuller Electrical Co., 44 E. 14th. N. Y	Insurance, Boiler. Hartford Steam Boiler Insuection & Insurance Co., 30 Iron. (Manufacturers' Agents.) Cox. Jr. Justice & Co., 33 Wainut Phila	1
Cincinnati Barbed Wire Feace Co., Cincinnati, O. 44 Hawk Eve Steel Barb Fence Co., Burlington, Iowa-3o Iowa Barb Wire Co., 95 John, N. Y. Mound City Barbed Fence Co., St. Joulis, Mo. 88 St. Louis Wire Feace Co., St. Joulis, Mo. 88 St. Louis Wire Feace Co., St. Joulis, Mo. 98 Washburn & Hosen Mig. Co., Worcester, Mass. 2 Washburn & Bosen Mig. Co., Worcester, Mass. 2	Fuller Electrical Co., 44 E. 14th, N. Y	Cox. Jr., Justice & Co., 333 Wainut. Phila 5 Hoffman J. W. & Co., 268 & 4th, Phila 5 Levis Henry & Co., Philadelphia, Pa. 5 Lundell Chas. G. (Swedish), Boston, Mass. 6	1
Mound City Barbed Fénce Co., St. Louis, Mo	Furre Electrical Co., 44 E. 1448. N. Y	Iron. Manufacturers of. Albany & Rensselaer Iron & Steel Co., Troy, N. Y33 Albany was Relieve Will Co. Albantown Rolling Will Co.	
Washburn & Moen Mfg. Co., Worcester, Mass 2 Barrel Machinery. Crossley H. A., Clevoland. O	Stokes & Parrish. Philadelphia: 42 Emery and Emery Wheels. 20 Rogers J F. & Co., 107 Liberty, N. Y. 20 Walpole Emery Mills, Boston, Mass. 38	Lundell Chas. G. (Swedish). Boston, Mass	
Wanduri a voca age Barrel Machinery. Crosaley H. A. Cleveland, O	Walpole Emery Mills, Boston, Mass	Carnegie Bros. & Co., Limited, Pittsburgh, Pa. 37 Elba Iron and Bolt Co., Limited, Pittsburgh, Pa. 38 Keystone Rolling Mill Limited, Pittsburgh, Pa. 38	0
		Kirrpatrick & Co. Pittaburgh Pa. 4 Leonard John, 40 West St. N. Y.	0
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Peck & Bemis, Cleveland, O	The Norwalk Iron Works Co., S. Norwalk, Conn. 42 Twiss Nelson W., New Haven, Conn. 42	Whipple, Geo. H. 37 Wood Alan & Co., Arch, Philadelphia. 37	11
Bicycles. Yope Mfr. Co., 507 Washington. Boston. 44 Bird Cages. Makers of. Gunther G., 46 Park Place, N. Y. 3 Jewett John C. & Sons, Buffalo, N. Y. 35 Jindeman O. & Co., 24; Pearl, N. Y. 3 Maxheimer John. 247 and 249 Pearl, N. Y. 7 Pierce Geo. N., Buffalo, N. Y. Bits and Braces, Manufacturers qf. Barby Bit Co., Ansonia, Conn. 30	Wetherill Robt. & Co., Chester, Pa., 43 Engravers. Crosscup & West. Experts, Mechanical and Patent. Robbins E. P., Cincinnati, O. Facings, Mechanical and Patent. Robbins E. P., Cincinnati, O. Facings, Poundry. Emerick, A. J. & Co., 514 Beech, Phila. S. Whitehead Bros., 517 W. 15th, N. Y. Experts, Makers of, 514 Beech, Phila. S. Whitehead Bros., 517 W. 15th, N. Y. Experts, Makers of, 514 Million of State Co., 52 Gold, N. Y. John Sommer's Son, Newark, N. J. John Sommer's Son, Newark, N. J. John Sommer's Son, Newark, N. J. Faucets, Soft-Meassiring, Makers of, 514 Millionok, N. Y. Experime Mfc. Co., of Pa., Phila, and N. Y. Lane Bros., Millibrook, N. Y. Evencing, &cc.	wood Alan & Co., Arch, Philadelphia. Blakey & Walbaum, Philadelphia, Pa. Blakey & Walbaum, Philadelphia, Pa. 5 Boynton Geo, A., 70 Wall, N. Y. 4 Etting Edward J., Philadelphia, Pa. 5 Fox & Drummond, 66 Wall, N. Y. Gallaudet P. W. & Co., Broadway and Wall, N. Y. A. Mann & Jones, Hanover, N. Y.	,
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Ballers, Steam. Duplex Safety Boiler Co., 34 Cortlandt, N. Y. 42 Harrison Boiler Works, Philadelphia. Pa. 43 Lisars, J. S. & Co., Chicago, III. New England Mach'y Depot, 56 N. 5d, Phila. 43	Files, Manufacturers of. Auburn File Works, & Chambers, N. Y	Abeel Brothers, 100 South N. Y. Abbott Jore. & Co. New York and Boston	1
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Choraix Caster Co., Indianapolis, Ind 10 Castinus: Fron. Cheney S. & Bon. Manlius, N. Y. 6 Devin Thos. & Co., Philadeiphia, Pa. The Craighead & Elwell Mfg. Co., Bridgeport, Ut. 44 Haight & Clark, Albany N. Y. 33 Hammer & Co., Branford, Conn. 44 Lockwood Mig. 64 Lockwood Mig. 64 Lockwood Mig. 65 North Bros. hladelphia, Pa. North Bros. hladelphia, Pa. Guerns E. C. & Co., Syrsouse, N. Y. 44 Gastings, Sicel.	Atlantic Stone Co., Boston, Mass	Disson Henry & Sons. Philadelphis. Lecks and Knebs. — Manaficeturers of. Bohannan Wilson, Broadway and Kossuth, Brook- tyn, E. D	1
Hammer & Co., Branford, Conn	Handles, Spokes, &c. Hundley & Hanks, 79 Reads, N. Y	Eagle Lock Co., Terryville, Conn	-
North Bros., Philadelphia, Pa. Queen City salleable Iron Co., Cincinnati, U	Kidder Slide Door Hanger Co., Romeo, Mich	Smith & Egge Mfg. Co., Bridgeport, Conn. 12 Trenton Lock and hardware Co., Trenton, N. J. 14 Vale Lock Mfg. Co.	1
Costings, Steel. Chester Steel Castings Co., 207 Library, Phila., Pa. 44 Chester Steel Cast Steel Co., Chaster, Pa. 44 Flagg Stanley G. & Co., Philadelphis. 44 Flagg Stanley G. & Co., Philadelphis. 44 Flitsburgh Steel Casting Co., Pittaburgh, Pa. 44	Terry Mig. Co., Dundee, N. Y	Whipple Mrg. Co., Cleveland, O	1
Flagg Stanley G. & Co., Philadelphia	Ladle & Band Powder Co. 29 Murray, N. Y. 33 Handles, Spokes, dcc. Hundley & Hanks, 79 Reade, N. Y. Hangers, Barn Door. Kidder Silde Door Hanger Co., Romeo, Mick. 28 Medina Mfg. Co., Modina, N. Y. 30 Moore S. H. & E. Y., Chicago, Ill. 35 Terry Mfg. Co., Dundee, N. Y. 43 Harsware Commission Merchants. Brower & Loeds, St Murray, N. Y. 36 Field Alfred & Co., 94 Chambers, N. Y. 10 Graham & Haines, 113 Chambers, N. Y. 48 Haydock, Robt, R. & Co., 75 Murray, N. Y. 26 Siedel J., Habana, Cubs. 20 Sise, H. F., 105 Chambers, N. Y. Hardware Dealers.	Whipple Mfg. Co., Cleveland, O. Machinery, Adt John, New Haven, Conn. Barnes W. F. & John, Rockford, Ill. 10 dilsa & Williams 167 Plymouth, Brookfyn. 49 Box Alfred & Co., 122 Green, Phila. 43 Dodge & Blake, Newark, N. J. 20 dreft, E. & t. V., Annochester, H. 48 49 Corrett, E. & t. V., Annochester, H. 48 Keily & Ludwig, Philadelphia. 1. B. Flanders Machine Works, Philadelphia, Pa. 48 Monawk & Hudson Mfg. Co., Waterford, N. Y. New England Machinery Depot, Philadelphia, Pa. 48 Peerless Punch and Bhear Co., 115 W. Liberty St., New York.	1
Lechner Mining Machine Co., Commons, C. Chains Manufacturers of Bradlee & Co., & Richmond St., Phila., Pa 5 Cincinnati Rolling Mills and Chain Works. Cincinnati	Siedel J., Habana, Cuba	Podge & Blake, Newark, N. J. 8 Forsatth S. C. & Co., Manchoster, N. H. 42 Garyin E. E. & Co., to Contro. N. V. 42	
cinnati, O	Lioyd, Supplies & Waiton. 025 Market, Phila	Helly & Ludwig, Philadelphia. 20 L. B. Flanders Machine Works, Philadelphia, Pa. 25 Monayk & Hudson Mg. Co. Waterford, N. V.	1
Chemicals Elmer & Amend, 205 Third Ave., N. Y	Hardware Importers. Boker Hermann & Co., tot Duane, N. Y. 32839 Field Alfred & Co., og Chambers, N. Y. 10 McCoy & Banders, 192 Duane, N. Y. 10	New England Machinery Pepot, Philadelphia, Pa. 43 Poerloss Punch and Shear Co., 115 W. Liberty st., New York.	1
Clock Springs, ecc.		New York. 408 43 Pittsburgh Mfg. Co., Pittsburgh, Pa. 41 Purdy Machine Co., Cleveland, O. 43 Boognet J. F. Co., 102 Liberty, N. V. 43	1
Haskell, Wm. H. & Co., Providence, R. I	Butler & Goldey Mg. Co., cy Chambers, N. Y	Pittaburgh Mig. Co., Pittaburgh, Pa. 41 Purdy Machine Co., Cleveland, C. 43 Rogers J. F. & Co., 107 Liberty, N. Y. 20 Sellers Wm. & Co., Phila and pa Liberty st., N. Y. 20 Stokes & Parrish, Philada, Pa. 45 Stov Flexible Shart Co., Limited, Philadelphia. 43 The Stilles & Parray Press Co., Middletown, Ct. 44 Watherfill Schert, R. Co., Charter Ph.	-
Conl Hods and Vases. Jewett John C. & Sons, Buffalo, N. Y	Lloyd, Supplee & Waiton, 025 Market St., Phila., Pa.17 Miller's rails Co., 42 Chambers, N. Y	TO DELIDERE RECORD OF COLUMN A MICH. L. MICH. C.	12.
Dunbar Bros. Bristol. Count Conch Seriews. Haskell, Wm. H. & Co., Providence, B. I. 41 Usal. Miners of. Pardec A. & Co., Providence, N. Y 36 Conl Hade and Vances Jewett Joho Chon, Buffalo, N. Y 35 Griffiths Co., Phila. Pa. Geffee and Spice Mills. Lane Brothers, Millbrook, N. Y 8 Enterprise Mfg. Co., Philadelphia, Pa. 33 Coke.	Shepard Hardware Co., Buffalo, N. Y. 36 Stanley Works, New Britain, Conn. 33 Tietout W. & J. 32 Chambers N. V. 33	Machinery (Barnes's Foot Fower,) Little Chas. E., so Fulton, N. Y	
Enterprise Mig. Co., Philadelphia, Pa. 33 Coke. Wister Francis. 230 S. Third, Phila	Lioyd, Supplee & Waiton, 025 Market 85., Phila., Pa.17 Miller's rails Co., 74 Chambers, N. Y	Fellows John. Williamsburg N. Y	1
Coke. Wister Francis, 230 S. Third. Phila	American Machine Co., 128 Chambers, N. Y 30	Box Alfred & Co., 312 Green, Philadelphia, Pa., 43 Bullard E. P., 44 Dey, N. Y. Flanders L. B., 1988 Hamilton, Philadelphia, Pa., 43	1
Stevens J. & Co., Chicopee Falls, Mass	Moore S H & E V Chicago	Geo. Place Machinery Agency, 121 Chambers N.Y 20 Harrington E. & Son, 15th st. and Pennsylvania ave. Philadelphia Pa.	1
Oregon & Bros., 8: Chambers, N. Y	Reed & Co., Higgsninn, Conn. 19	Hachtsletz' Tools and Sapplies. Blaidell P. & Co., Worcester Hass. 44 Box Alfred & Co., 112 Green. Philadelphia. Pa. 43 Box Alfred & Co., 112 Green. Philadelphia. Pa. 43 Bullard K. P. 44 Dey, N. Y. Flanders L. B., 1025 Hamilton, Philadelphia, Pa. 15 Geo. Place Machinery Agency. 121 Chambers. N. Y. 30 Harrington E. & Son., 15th st. and Pennsylvania ave., Philadelphia, Pa. 43 J. Gray's Machine Depot, 35 Dey, N. Y. Sellers W. & Co., Westerford. N. Y. Sellers W. & Co., Philadelphia, Pa. 92 Sellers W. & Co., Philadelphia, Pa. 94 Wickersham & Co., Philadelphia, Pa. 94 Wickersham & Co., Philadelphia, Pa. 94 Wiskersham & Co., Philadelphia, Pa. 94 Walters	
Cordage Elisabethport Steam Cordage Co., 48 South, N. Y35 Corners, Window and Deer Servers. Porter Mfg. Co Burlington, Vt	Wollensak J. F., Chicago, Ill. 40 Harness Snaps. 40	Sellers Wm. & Co., Phila and 70 Liberty st., N. Y., 43 Wickersham & Co., Philadelphia, Pa., 43	1
Corners, Window and Door Servers. Porter Mfg. Co., Burlington, Vi	Harness Snaps. Covert Mrg. Co. West Troy. N. Y	Wallets. N. Y. Handle and Mallet Works, 456 E. Houston	-
Corrugated This and Pool Co & Day N. V 4	Hay Knives. Hot Hiram & Co., East Wilton, Me. Heater and Parifier, Feed Water. Lowe & Watson, Bridgeport, Conp	N. Y. Handle and Mallet Works, 456 E. Houston	
Chalmers Spence Co., 23 John St., N. Y	Manu James & Sons, Buffaio, N. Y	Metals. Detroit Conner and Brass Rolling Mills Detroit	1
Crucibles. Seidel R. B., Philadelphia, Pa	Bruce George W., z Platt, N. Y	Mich Dickerson, Van Dusen & Co., 29 and 31 Cliff, N. Y., 2 Dickerson, Van Dusen & Co., 29 and 31 Cliff, N. Y., 2 Ekins Mig, and Gas Co., Philadelphia, Pa. 43 Goldsmith Moses & Son, Charleston, S. C. 4 Marchant & Co., Philadelphia,	
Cupolas. Surre Mfg. Co., 245 Broadway, N. W	Hog Ringers. Chambers Bering & Quinlan. Decatur, Ill	Marchant & Co., Philadelphia. Saylor & Co., 9 John, N. Y. Northrop A. C., Waterbury, Conn. Phelips, Dodge & Co., Cliff, bet. John & Fulton, N. Y. Phosphor Bronze Smelting Co., Limited, s12 Arch, Philadelphia.	3

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Cutlery, Manufacturers of. Conway T. G., & Chambers, N. Y. Conway T. G., & Chambers, N. Y. Purness, Banniste & Co., Newark, N. J. O Gifford Mfg. Co., & Chambers, N. J. O Goodell Co., Antrina, N. H. John Russell Cutlery Co., 25 Chambers, N. Y. 44 The Lamson & Goodnow Mfg. Co., 86 Chambers, N. Y. N. Y. Deoxidized Bronne. Philadelphia Smelting Co. Ld., Philadelphia, Pa. 33 Differential Pulley Blocks. Yale Lock Mfg. Co., 53 Chambers, N. Y. 3 Dog Collars. Medford Fancy Goods Co., 65 Duane, N. Y. 3 Discount Books and Tables. Jennings S. H., Deep River, Conn. Leigh E. B. & Louis, Mo. 25 Pope & Stevens, 112 Chambers, N, Y. 10 Dinner Pril and Lantern. Haight Joseph, Port Chester, N. Y. 13 Door Heltes.	
John Russell Cutlery Co., 25 Chambers, N. Y	
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Vale Lock Mfg. Co., 43 Chambers, N. Y	1
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Pope & Stevens, 114 Chambers, N, Y 10 Dinner Pati and Lantern. Haight Joseph, Port Chester, N. Y 13	
Ives Hobart B., New Haven, Ct	1
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Haight Joseph, Port Cheeter, N. Y. Boor Heits. Ives Hobart B., New Haven, Ct. Door and Gate Springs. Devore L. M., Freeport. III. Keens Bros., Chicago, III. 37 Keens Bros., Chicago, III. 38 Mohr, J. A. & Co., Manchester, Iowa. Peeriess Door Spring Co., Chroinasti, O. Van Wagoner & Williams, & Beekman, N. Y. 40 Prilling Machines, Makers of. Feeriess Punch and Shear Co., 115 W. Liberty, N.Y. 2023.	1
Seliers Wm. & Co, Phila. and 79 Liberty. N. Y. Seliers Wm. & Co, Phila. and 79 Liberty st. N. Y. Sints Clark, Springfield, O	1
Wiley & Russeli Mfg. Co., Greenfield, Mass	1
Enve Trough Hangers. Heartley & Demsey, Toledo, Ohio	1
Standard Manufacturing Co., Boston, Mass. Bleotric Light. Fuller Electrical Co., 48 E. 14th. N. Y. Stlevnters. Makers of. Clem & Morse. Philadelphia, Pa	
Crane Bros. Mfg. Co., Chicago, Hi	1
Stokes & Parrish Philadelphia. 42 Emery and Emery Wheels. 20 Rogers J F. & Co., 107 Liberty, N. Y. 20	
Granville Hydraulic Elevator Co., 1198 Hway, N. Y. Stokes & Parrish, Philadelphia: Emery and Emery Wheels. Rogers J. F. & Co., 107 Liberty, N. Y. 20 Walpole Emery Mills, Boston, Mass. 38 Engineers' Musphies Lake City, Utah. 30 Rogers J. F. & Co., 107 Liberty, N. Y. 29 Engines, tans. Schleicher, Schumm & Co., Philadelphia. Engines Locometive. Baldwin Locometive Works. Philadelphia, Pa. 6 Engines. Stens. Makers of. Cox & Sons, Philadelphia, Pa. 43 Ervin Coss. W. & Co., Fhiladelphia, Pa. 43 Ervin Coss. W. & Co., Fhiladelphia, Pa. 44 France Fire Engine Co., Harrford, Conn. 45 Engines Fire Engine Co., Harrford, Conn. 50 Now Engiand Mach y Depot. 20 N. 50 Norwalk Fron Works Co., S. Norwalk, Conn. 21 The Norwalk Fron Works Co., S. Norwalk, Conn. 22 Twiss Nelson W., New Haven, Conn. 23 Engravers. Crosscup & West. 45 Engravers. Crosscup & West.	
Engines, tins. Schleicher, Schumm & Co., Philadelphis	
Baldwin Locomotive Works, Philadelphia, Pa 6 Engines, Steam, Makers of, Cox & Sons, Philadelphia, Pa	
Ervien Chas. W. & Co., Philadelphia, Pa	
New England Mach y Depot. 308 N. 3d. Phila	
Twiss Nelson W. New Haven, Conn. 42 Wetherill Robt. & Co., Chester, Pa.,	1
Wetheriii Robt. & Co., Chester, Pa., 41 Engravers, West. Crosscup & West. Experts, Mechanical and Patent. Robbins E. P., Cincinnati, O. 18 Facings, Foundry, Emerick, A. J. & Co., 19 Paxono, W. & Co., 514 Beest, Phila. 2 Paxono, W. & Co., 514 Beest, Phila. 3 Philehead Bros., 437 W. 13th, N. Y. 25 Fancets, Makers of Co., 29 Gold, N. V. John Sommer's Son, Newark, N. J. Funcets, Scht Measuring, Makers of Enterprise Mig. Co., of Pa, Phila, and N. Y. Lane Bros., Milliprook, N. Y. Lane Br	
Facings, Foundry, Emerick, A. J. & Co., Philadelphia, Pa	١,
Whitehead Bros. 517 W. 15th, N. Y	ľ
Faucets, Self-Measuring, Makers of, Enterprise Mrg. Co., of Pa., Phila and N. Y. 13 Lane Bros. Millbrook, N. Y. 13	1
Fencing, &c. Champion Iron Fence Co., Kenton, Ohio	
Cleveland Wrought fron Fence Wis., Cleveland, O.11 Files, Importers of. Field Airred & Co. og Chambers, N. Y	1
Files, Manufacturers of. Auburn File Works, 80 Chambers, N. Y	
Boynton S. M., So Beekman, N. Y. 42 Disston Henry & Sons, Phila. 38 Everhart James M., Scranton, Pa. 44 Henseler Chystelan Philadelphia D. 44	
Bission nearly & Sons, Fina	
Nicholson File Co., Providence, R. I	
Paul Chas. B., Williamsburgh, N. Y. 8 Spencer John & Son, Sheffield, England. 10 The J. Barton Smith Co., Philadelphia, Pa. 8 Union File Works, Baltimore, Md. 8	
Union File Works, Baltimore, Md. Filters, John C. & Sons, Buffalo, N. Y. File Brick, Makers of. Bogner & O'Brien, Philadelphia, Pa. Colson Chas. D., Chicago, Ill. Gardner Stothers, Pittaburgh, ra. Sons, Buffalo, N. Y. Kreiscner B. & Sons, Soot of E. Houston St. Miller Samuel P., 399 S. stb St., Philadelphia. Maurer Henry, 118 East 22d, N. Y. Ostrander James & Son, Toy, N. Y. Ostrander James & Son, Toy, N. Y. Union Mining Co., Philadelphia, Pa. Valentine M. D. & Bro., Woodbridge, N. J. Wasson Fire Brick Co., Perth Ambov, N. J. Woodland Fire Brick Co., Woodland, Pa. Fishing Tackle. Cornwall Wm. M., 18 Warren, N. Y.	
Colson Chas. D., Chicago, III. 30 Gardner Brothers, Pittaburgh, Pa. 30 Hall & Sons, Buffelo, N. Y. 30	
Kreiscner B. & Sons, foot of E. Houston St., 30 Miller Samuel P., 300 S. 5th St., Philadelphia. 30 Maurer Henry, 416 East 23d, N. Y. 30	
Newton & Co., Albany, N. 1 30 Ostrander James & Son, Troy, N. Y. 30 Rimington S. A., 40 and 42 Broadway, N. Y. 30 Union Wining Co., Philadelphia, Pa.	
Valentine M. D. & Bro., Woodbridge, N. J. 30 Watson Fire Brick Co., Perth Ambov, N. J. 30 Woodland Fire Brick Co., Woodland Fa.	
Buffalo Forge Co., Buffalo, N. Y	١,
Holt Mfg. Co. Cleveland, O. 11 Kevstone Portable Force Co. 218 Carrier. Phil. 10 Fargings. Iron and Steel. Chicago Steel Horse Shoe Co. Chicago, Ill. 17&20 Hubbard Charles, 46 Clift, N. Y. Hose Wm. a kros. West Philadelphia, Pa. 6 Fonnairy Snapplics. 20 Emerick S. & Co. Chicinanti O. 12 Whitehead Bros., 517 W. 15th, N. Y. 28 Farnaces. Makers of. Richmond & Potts. 110 S. 15h, Phila. Pa. 5 Farnace Charring Scale. 16 Richlé Bros., Philadelphia, Pa. 11 Farnace Charring Scale. 16 Farnace Charring Scale. 17 Farnace Holsts. 20 Farnace Holsts. 20 Farnace Shields. 20 Farnace Shields. 20 Farnace Shields. 20 Gardan Tools. 20 Carré Moen. 23 W. 39th, N. Y. 3 Gardan Tools. 20 Carnite Iron Wats. 37 Gardan Teols. 20 Crastel Iron Wats. 37 Grante Iron	1
Hubbard Charles, 46 Cliff, N. Y	1
římerick J. A. & Co., Philadelphia, Pa	1
Furnaces, Makers of. Richmond & Potts, 119 S. 4th. Phila., Pa	1
Richlé Bros., Philadeiphia, Pa	1
Stokes & Parrish, Philada., Pa	1
Parniture Springs. Cary & Moen, 234 W. 29th, N. Y	1
Dunlap C. W. & Co., 43 Chambers, N. Y	1
Grate Bars. Creswell David S., Philadelphia, Pat Grindstones.	1
Grindstames. Co., Boston, Mass. 23 Atlantic & Co., Boston, Mass. 33 Atlantic & Co., Boston, Mass. 33 McDemont & Beres & Stone Co., Cleveland, O. 33 Objo Grindstone Co., Cleveland, O. 34 Wood Walter R. 28 and 28 Front N. Y. 34	1
Gannewder, Makers of.	
Handles, Spokes, &c.	
Hundley & Hanks, 79 Reade, N. Y. Hangers, Barn Deer. Kidder Silde Door Hanger Co., Romeo, Mick	
Hardware Commission Merchants. Brower & Leeds, 8t Murray, N. Y	1
Graham & Haines, 113 Chambers, N. Y. 8 Haydock, Robt. R. & Co., 74 Murray, N. Y. 26 Siedel J. Habana, Cubs. 20	
Sheuard Sidney & Co., Buffalo N. Y. 27 Hardware Importers. Boker Hermann & Co., 10 Duane. N. Y. 32839 Field Affred & Co., 03 Chambers, N. Y. 10 McCoy & Sanders. 122 Duane, N. Y. 10	
McCoy & Sanders, 132 Duane, N. Y. 10 Hardware Manufacturers.	
Butler & Goldey Mig. Co. 97 Chambers, N. Y33 Enterprise Mig. Co. Phila	
Jennings C. E. & Co., o Chambers, N. Y	
McCoy & Sanners, 192 Danaes, N. 10 Hardware Manufacturers. Butler & Goldey Mig. Co 97 Chambers, N. Y	1
Stanley Works, New Britain, Conn. 33 Tiebout W. & J., 32 Chambers, N. Y. 12 Trenton Lock & Hardware Co., Trenton, N. J. 16 Union Mrg. Co., 92 Chambers, N. Y. 7	
Van Wagoner & Williams, & Beekman, N. Y	
Kyser & Bex, Philadelphia, Pa	1
Caveland w rought from fence was Caveland of I Kyser & Bex, Philadelphia, Pa	1
Wollenak J. F., Chicago, Ill	1
Globe Mfg. Co., Middletown, Conn	1
Lowe & Watson, Bridgeport, Conn	
Mana James & Sons, Burraio, N. Y	

	THE IRON AG	H
-	Holsting Machines. Box Alfred & Co., 312 Green, Phila. 43 Clem & Morse, Philadelphia, Pa. 45 Dunn J., Cleveland, O. 41 Harrington Edwin & Son, Philadelphia, Pa. 43 Moore S. H. & E. Y., Chicago Sellers Wm. & Co., Phila. and 79 Liberty st., N. 75 Sellers Wm. & Co., Phila. and 79 Liberty st., N. 74 Stokes & Parrish, Philada. Pa. 72 Yale Lock Co., 32 Chambers, N. V. 3 Hooka (Cotten & Hale.) New York Handle & Mallet Works, 456 E. Houston. 13 Horse Clippers.	1
2	Dunn J., Cleveland, O. 41 Harrington Edwin & Son, Philadelphia, Pa43	1
,	Sellers Wm. & Co., Phila. and 79 Liberty st., N. Y. 43 Stokes & Parrish, Philads., Pa. 42 Vals Lock Co. of Chambers, N. Y.	1
	Hooka (Cotton & Hale.) New York Handle & Mallet Works, 456 E. Houston13	1
3	New York Handle & Hallet Works, 466 E. Houston13 Horse Clippers. Soker Hermann & Co. 101 & 103 Duane, N. Y32&39 Horse Hay Borks. Waldron John, Muncy, Pa. Herse Nalls, Makers of, Bridgewater Iron Co. Bridgewater, Mass	1
5	Herse Maties, Makers of. Bridgewater Iron Co., Bridgewater, Mass	1
2	FP Nail Co., Cleveland, O	1
	Baranac Horse Naii Co., Plattsburg, N. Y	1
5	Chicago Steel Horse Shoe Co	0
	ARUC MARKE CEUVER,	1
	Witherow & Gordon, Pittsburgh, Pa. 33 Hydrauls, &c. McLean John, 200 Monroe, N. Y. Mohawk & Hudson Mfg. Co., Waterford, N. Y. 10 Hydrauls Jacks Lyon E. & College Co., 136 Lyon E. & College Co., 136 Coream Freezers. American Machine Co., 136 Chambers st., N. Y. 268:30 White Mountain Freezer Co., Laconia, N. Si. 39 Injecters.	1
	Mohawk & Hudson Mfg. Co., Waterford, N. Y ro Rydraulic Jacks. Dudgeon Richard, 24 Cotumbia, N. Y 11	1.
	Lyon E. & Co., 470B Grand, N. Y	1
	White Mountain Freezer Co., Laconia, N. H30 Injectors, Jenks James, Detroit, Mich	
•	Insurance, Boller. Hartford Steam Boller Inspection & Insurance Co 30	1
9	Jenks James, Detroit, Mich. Insurance, Boiler: Hartford Steam Boiler Insucation & Insurance Co., 30 Iron. (Mans/facturers' Apents.) Cox. Jr., Justice & Co., 33 Wainut, Phila. 5 Hoffman J. W. & Co., 26 S. 4th, Phila. Levis Henry & Co., Philadelphia, Pa. Lundell Chas. G. (Swedish), Boston, Mass. 6	
3	Levis Henry & Co., Philadelphia, Pa. Lundell Chas. G. (Swedish), Boston, Mass. Fron. Manufracturers of. Albany & Rensselaer fron & Steel Co., Troy, N. Y., 33 Allentown Rolling Mill Co., Allentown, Pa. Birmingham Rolling Mill Co., Louisville, Ky. 6 Britton Iron and Steel Co., Cleveland, Ohlo. 6 Britton Iron Company, Troy, N. Y. Carnegle Bros. & Co., Limited, Pittsburgh, Pa., 37 Elba Iron and Bott Co., Limited, Pittsburgh, Pa., 37 Elba Iron and Bott Co., Limited, Pittsburgh, Pa., 38 Keystone Rolling Mill, Limited, Pittsburgh, Pa., 48 Kirxpatrick & Co., Pittsburgh Pa. 4 Leonard John, 40 West St., N. Y. 4 Montour Iron & Steel Co., Danville, Pa., 37 Floring Iron & Steel Co., Danville, Pa., 37 Floring Iron & Golding Mill, Co., Chicaro, Ill., 37 Floring Iron & Co., Calannough, Fennelly Iron Rome Merchani Iron Mills, Rome, N. Y. 6 Kowland James & Co., 20 N. Delaware ase., Phila. 8 Hondon William Mill Co., Paterson, b. J. 1 Ulater Iron Works, 9 Broadway, N. Y. 4 Whipple, Geo., H. 7 Wood Alan & Co., Arch, Philadelphia, Pa. 1 Fron Brohers. 1 Fron Works, 9 Broadway and Wall, N. Y. at Mann & Jones, Hanover, N. Y. 8 Gatlaudet P. W. & Co., Broadway and Wall, N. Y. 9 Reed Joseph P. & Co., Philadelphia, Pa. 1 Fron & Charconi, Manover, N. Y. 1 Reed Joseph P. & Co., Philadelphia, Pa. 1 Leon Commission Merchants. Balley J. F. & Co., S. Wall, N. Y. 1 Real Colony of Merchants. Balley J. F. & Co., S. Wall, N. Y. 8 Balley J. F. & Co., S. Wall, N. Y. 8 Balley J. F. & Co., S. Wall, N. Y. 8 Balley J. F. & Co., S. Wall, N. Y.	1
	Albany & Rensselaer Iron & Steet Co., Troy, N. Y33 Allentown Rolling Mill Co., Allentown, Pa	
	Britton Iron and Steel Co., Cleveland, Ohio	
,	Elba Iron and Bolt Co., Limited, Pittsburgh, Pa33 Keystone Rolling Mill, Limited, Pittsburgh, Pa4 Kirgnatrick & Co. Pittsburgh, Pa4	1
	Leonard John, 450 West St., N. Y. Montour Iron & Steel Co., Danville, Pa	1
	Phomix iron Co., 410 Walnut, Philadelphis 8 Roane Iron Co., Chattanooga, Tenn	1
	Rowland James & Co., 920 N. Delaware ave., Phila. S Rowland Wm. & Harvey, Philadelphia	1
	Shoenberger & Co, Pittsburgh, Pa. The Passaic Rolling Mill Co., Paterson, N. J. Ulater Iron Works, or Broadway, N. V.	1
	Whipple, Geo. H. 37 Wood Alan & Co., Arch, Philadelphia. 37	11
	Blakey & Walbaum, Philadelphia, Pa. 5 Boynton Geo. A., 70 Wall, N. Y	1
	Fox & Drummond, 68 Wall, N. Y. Gallaudet P. W. & Co., Broadway and Wall, N. Y. 41	1
	Mann & Jones, 4 Hanover, N. Y. Reed Joseph P. & Co., Philadelphia, Pa	1
	Lundell Chas. G. (Swedish), Boston, Mass	1
	Fich attended Co. 03 Chambers, N. I	1
	Hernsheim L., 105 John, N. Y. 6 Lundell Chas. G., Boston, Mass. 6	11
	Hernshelm L., 105 John, N. Y. Hernshelm L., 105 John, N. Y. Lundell Chas. G., Boston, Mass. 6 Mohr J. J., 450 Walnut, Philadelphia. 7 Richardson J. O., 212 Dock, Fhiladelphia. 8 Wister L. & H., 328 South Fourth, Philadelphia.	
2	Iron Dealers. Abeel Brothers, 190 South N. Y	1.
	Abbott Jere. & Co., New York and Boston	ľ
	Budd & Ellis, New York and Boston. 36 Carmichael & Emmens, 130 and 132 Cedar, N. Y. 4 Cooper, Daniel F. & Washington, N. 4	1
-	Cox Justice, jr., & Co., Philadelphia, Pa	i
	Hoffman J. W.& Co., 208 S. Fourth, Philadelphia. 5 Hubbard Chas., 46 Cliff, N. Y.	1
2	Judson B. F., 4s7 and 4s9 Water, N. Y	ľ
1	Lissberger S. A., 520 É. 19th, N. Y. Lloyd & Lindsay, Philadelphis. Lundberg Gustaf as Kilby Reston, Mass.	1
	Lundell Chas. G. (Swedish), Boston, Mass. 6 Middleton W. S., 52 John, N. Y. 4	1
	Ogden & Wallace, St. St. Sp and or Elm, N. Y 4 Pierson & Co., 24 Broadway, N. Y	3
2	Quincy John W & Co., 98 William, N. Y Richards D. W. & Co., 92 Mangin, N. Y	1
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	Dudgeon Richard. 24 Columbia. N. Y. Tubes. Telescope. R. T. Deakin, Philadelphia, Pa. Tubes. T. Deakin, Philadelphia, Pa. Tubing. Merchant & Co 607 Market, Phila
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	Dudgeon Richard. 24 Columbia. N. Y. Tubes. Telescope. R. T. Deakin, Philadelphia, Pa. R. T. Deakin, Philadelphia, Pa. Tubing. Merchant & Co 607 Market, Phila

NEW YORK WHOLESALE PRICES, April 19, 1882.

METALS.	All Mandrei Drawn Tubes under 36 in. 3 cents per pound advance.
IMON.—DUTY. Bars, 1 to 1½c. F B; Sheet, Ban MoDp and Seroll, 1½(to 1½c. F B; provided, that non of the above iron shall pay a less rate of duty that 34 per cent. Pig. \$7 to n; Polished Sheet, 3c. F B Wrought Scrap, 88 F to n; Cast Scrap, 86 F to n. Rail road, 70c. F 100 B. Boiler and Plate, 1½c. F B.	ZINC TUBING—dis. 25 %. Plain. Fancy French and Extra Patterns
24 per cent. Pig, \$7 \$ ton; Polished Sheet, 30. \$1 b Wrought Scrap, \$8 \$ ton; Cast Scrap, \$6 \$7 ton. Rail road, 20. \$2 to \$5. Roller and Plate, \$160. \$2 b.	GERMAN SILVER TUBING.—dis 10 \$. 4 Per cent. 6 Per cent.
American Iren.	Plain Fanor Fano
Gray Forge	18 Per cent
Gray Forge. \$\psi \text{total 25,00}\$ \[\text{Feinton}. \text{\$\psi\$ ton 25,00}\$ \[\text{Carmbroe (to arrive)}. \text{\$\psi\$ ton 24,00}\$ \[\text{Coltness}. \text{\$\psi\$ ton 24,00}\$ \[\text{Coltness}. \text{\$\psi\$ ton 25,00}\$ \[\text{26,00}\$ \text{Coltness}. \text{\$\psi\$ ton 25,00}\$ \[\text{26,00}\$ \text{Carmbroeff} \text{Fon 25,00}\$ \[\text{26,00}\$ \] \[\text{26,00}\$ \text{26,00}\$ \] \[\text{26,00}\$ \text{26,00}\$ \] \[\text{26,00}\$ \] \[\text{26,00}\$ \text{26,00}\$ \text{26,00}\$ \text{26,00}\$ \] \[\text{26,00}\$ \tex	valued at 70 % h, or under, 2440; over 70 and n above 11, 30 % h; over 11, 340 % h, and no \$ ad v Railway Bars, 140 % h. Railway Bars, in part Ste
Langioan (to arrive)	
Raits. # ton \$47.00 @ 48.0 Iron. a mill # ton \$47.00 @ 48.0 Steel. at mill # ton \$2.00 @ 55.0 Old Rails Th # ton 27.50 @ 28.0 Old Rails DH # ton 29.50	For American Steel see quotations under heading Pittsburgh.
Old Rails Ts. # ton 27.50 @ 28.00 Old Rails D H. # ton 29.00 Scrap. Wront Scrap & ton from yard	Best Cast. P b 15 Extra Cast. P b 10 Round Machinery, Cast. P b 100
Scrap. Wrought Scrap \$ ton. from yard	Best Double Shear B 13- Blister, 1st quality B 190 German Steel, Best B 190
% to 1 in. round and square	gu quanty gc
Refined Iron: % to 2 in. round and square	3d quality. \$\\ \mathbf{B}\$ 13\\\ \mathbf{B}\$ 13\\\ \mathbf{A}\$ \\ \mathbf{N} \mathbf{T} \mathbf{M} \mathbf{O} \mathbf{N} \\ \mathbf{D} \mathbf{D} \mathbf{U} \mathbf{T} \mathbf{T} : \mathbf{P} \mathbf{g} \mathbf{g} \mathbf{N} \mathbf{D} \tag{0} \mathbf{D}
Norway Nail Rods	Pipe and Sheet, Age # s. American Bar
Common R. G. Marcican American American Mos. 12 to 20 B B 4 to 5 to The state Common Common Common The state Common Common Common The state Common The st	American
25 to 20.	N. P. U. BABBITT METAL.
Nos. 12 to 20. American R. G. American	N. P. U
Galvanized, 27 B 104c B4c Galvanized, 27 B 11 c 94c Patent Planished A B 104c B 94c	Block and Pigs free. Banca, subject to duty of a per cent. Banca.
Atherican Cold Rolled	Banca. W B 26 @ 29 Straits W B 260 English B B 260
which Copper is a component of chief value), 45 % ad valueren. American Ingot	I C 10X14 PrimeCharcoal
Braziera' Copper, ordinary sizes, 16 oz. per sq. ft., and o'er # b	C 2x12 Prime Charcoal.
which Copper is a component of chief value), 45 % ad valorem. American Ingot. **Merican Ingot. **Merican Ingot. **Merican Ingot. **Merican Ingot. **Merican Ingot. **Sharinino BRAMERES COPPER, BOLTS, &C. **Brasier's Copper, ordinary sises, 16 os. per sq. ft., and over \$\psi\$ **Branier's Copper, ordinary sises, under 16 os. **Brasier's Copper, 18 qq. ft. **Brasier's Copp	Death and the second
Circles 84 in. diameter and over. \$\psi\$ 300 Segment and Pattern Sheets. \$\psi\$ 300 Lecomotive Fire Box Sheets. \$\psi\$ 300	I C 10X14 } \$5.75 \$5.25 @ 5.9
Sheathing Copper, over 12 Os. \$\psi\$ 89. \$\psi\$. \$\psi\$ 8 280. \$\psi\$ 80 to Copper. \$\psi\$ 8 30 copper hottoms. \$\psi\$ 8 31 \$\pi\$ 320. \$\psi\$ 8 31 \$\pi\$ 320.	Prime Char. 2d Qual. Coke. I C 14320
	I C 20x26 11.75 @ 12.00 11.25 @ 11.50 IV or IX 20x28 15.50 I C 20x20 10.50
All other size Sheets, 25cc F sq. ft. For tinning both sides, double the above amount. O'REILS PATENT PLANISHED COPPER.—Net.	Tensus Flatz. Prime Char. 2d Qual. Coke. C (4x20
O'RELS PATENT PLANSHED COPPEL.—Net. 1438. 14 and 16 or. and heavier # 5 ayo By the case. # 5 so 4 os. and lighter	P 100 B.
7 in., 14x52. 8 in., 14x56. e in., 14x56. 14 and 16 os. and heavier \$\text{P}\$ 390 By the case. \$\text{P}\$ 38c (And all sizes not over 20 in. wide.)	ZINC, -DUTY: Fig or Block, \$1.50 \$ 200 B; Sheet, 2546 \$ B. Sheet, Cask
14 and 16 os. and beavier # 15 410	Paper Stock, &c.
BRASS.	
BRASS. Brown & Sharp's Gauge the Standard for Metals. Old English Gauge the Standard for Wire.	(Dealers' Selling Prices.)
The same and the same of the s	(Dealers' Selling Prices.) White Shirt Cuttings. No. 1. 714 8 White Shirt Cuttings, No. 2. 4 9
BRASS MANUFACTURERS' PRICE LIST.—dls. 20 @ 25 f. June 1880. Cash prices for Roll and Sheet Brass. For less quanties than 100 Bs add 30. # b.	(Dealers' Selling Prices.) White Shirt Cuttings. No. 1. 714 8 White Shirt Cuttings, No. 2. 4 9
BRASS MANUFACTURERS' FRICE LIST.—dls. 20 & 25 f. Cash prices for Roll and Sheet Brass. For less quanties than so Bs add 30. \$\forall B\to \text{.}\te	White Shirt Cuttings. No. 1. 74 8 8. White Shirt Cuttings. No. 2. 74 8 8 White Shirt Cuttings, No. 2. 74 8 8 White Shirt Cuttings, No. 2. 74 8 8 9. While Assorted Whites. 1. 74 8 9 9. While Assorted Whites. 1. 74 8 9 9. While Assorted Whites. 1. 74 8 9 9. Whites No. 1. 8 9 9 9. Whites No. 1. 8 9 9 9. Whites No. 1. 8 9 9 9. Whites No. 2. Whites Shirt Sh
BRASS MANUFACTURERS' FRICE LIST.—dls. 20 & 25 f. Cash prices for Roll and Sheet Brass. For less quanties than so Bs add 30. F B. HIGH BRASS. All Nos. not thinner than to No. 28, wider than 2 in., not wider than 1 in	White Shirt Cuttings. No. 1. 74 8 8. White Shirt Cuttings. No. 2. 74 8 8 White Shirt Cuttings, No. 2. 74 8 8 White Shirt Cuttings, No. 2. 74 8 8 9. While Assorted Whites. 1. 74 8 9 9. While Assorted Whites. 1. 74 8 9 9. While Assorted Whites. 1. 74 8 9 9. Whites No. 1. 8 9 9 9. Whites No. 1. 8 9 9 9. Whites No. 1. 8 9 9 9. Whites No. 2. Whites Shirt Sh
BRASS MANUFACTURERS' FRICE LIST.—dls. 20 & 25 f. Cash prices for Roll and Sheet Brass. For less quanties than so Bs add 30. \$\frac{1}{2}\$ B. HIGH BRASS. All Nos. not thinner than to No. 28, wider than 2 in., not wider than 1 in	White Shirt Cuttings. No. 1. 74 8 8. White Shirt Cuttings. No. 2. 74 8 8 White Shirt Cuttings, No. 2. 74 8 8 White Shirt Cuttings, No. 2. 74 8 8 9. While Assorted Whites. 1. 74 8 9 9. While Assorted Whites. 1. 74 8 9 9. While Assorted Whites. 1. 74 8 9 9. Whites No. 1. 8 9 9 9. Whites No. 1. 8 9 9 9. Whites No. 1. 8 9 9 9. Whites No. 2. Whites Shirt Sh
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BRASS MANUFACTURERS' FRICE LIST.—dls. 20 & 25 f. Cash prices for Roll and Sheet Brass. For less quanties than so Bs add 30. \$\psi\$ B. HIGH BRASS. All Nos. not thinner than to No. 28, wider than 2 in., not wider than 1 in	White Shirt Cuttings, No. 1 7 6 8 8 White Shirt Cuttings, No. 2 7 6 8 8 White Shirt Cuttings, No. 2 7 6 8 8 White Shirt Cuttings, No. 2 7 6 9 14 Mill Assorted Whites. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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BRASS MANUFACTURERS' FRICE LIST.—dls. 20 & 25 f. Cash prices for Roll and Sheet Brass. For less quanties than so Bs add 30. F B. HIGH BRASS. All Nos. not thinner than to No. 28, wider than 2 in., not wider than 1 in	Center Selling Prices
BRASS MANUFACTURERS' FRICE LIST.—dls. 20 & 25 %. Cash prices for Roll and Sheet Brass. For less quanties than so Bs add 30. \$\psi\$ B. HIGH BRASS. All Nos. not thinner than to No. 28, wider than 2 in. not wider than 1 in	Cents P.
Cash prices for Roll and Sheet Brass. For less quanties than soo Bs add 50. \$\psi\$ B. All Nos. not thinner than to No. \$\psi\$, wider than 2 in. not wider than 1 in	White Shirt Cuttings, No. 1 74 8 8 White Shirt Cuttings, No. 2 14 9 15 16 16 16 16 16 16 16 16 16 16 16 16 16
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Cash prices for Roll and Sheet Brass. For less quanties than soo Bs add 50. \$\psi\$ B. All Nos. not thinner than to No. \$\psi\$, wider than 2 in. not wider than 1 in	White Shirt Cuttings, No. 1 74 8 8 White Shirt Cuttings, No. 2 14 9 15 16 16 16 16 16 16 16 16 16 16 16 16 16
Cash prices for Roll and Sheet Brass. For less quanties than soo Bs add 50. \$\psi\$ B. All Nos. not thinner than to No. \$\psi\$, wider than 2 in. not wider than 1 in	White Shirt Cuttings, No. 1 74 8 8 White Shirt Cuttings, No. 2 14 9 15 16 16 16 16 16 16 16 16 16 16 16 16 16
Cash prices for Roll and Sheet Brass. For less quanties than soo Bs add 50. \$\psi\$ B. All Nos. not thinner than to No. \$\psi\$, wider than 2 in. not wider than 1 in	White Shirt Cuttings, No. 1 74 8 8 White Shirt Cuttings, No. 2 14 9 15 16 16 16 16 16 16 16 16 16 16 16 16 16
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Cash prices for Roll and Sheet Brass. For less quanties than so Bs add 30. \$\psi\$ B. All Nos. not thinner than 10 No. \$\psi\$, wider than 2 in. not wider than 1 in	White Shirt Cuttings, No. 1 746 8
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Cash prices for Roll and Sheet Brass. For less quanties than too he add 90. \$\psi\$ hall not be than too he add 90. \$\psi\$ hall Nos. not thinner than to No. \$\psi\$, wider than 2 in. not wider than 1 in	White Shirt Cuttings, No. 1 746 8. White Shirt Cuttings, No. 2 146 146 White Shirt Cuttings, No. 2 146 146 Unbleached Muslins. Co. 3 146 146 Unbleached Muslins. Co. 4 6 6 6 City Whites, No. 1 6 6 6 6 New Canton Flannels. 5 6 6 6 6 New Seconds, Carts. 5 6 6 7 No. 2 Whites. 7 6 6 7 Cotton Canvas. 5 6 6 7 Linen Canvas, No. 1 1 14 6 7 Seconds, City No. 1 1 14 6 7 Seconds, City No. 2 1 14 6 18 Cotton Canvas. 5 6 6 6 7 Mailla Rope. 5 6 6 7 Mailla Rope. 5 7 7 Mailla
Cash prices for Roll and Sheet Brass. For less quanties than soo Bs add 50. \$\psi\$ D. All Nos. not thinner than to No. \$\psi\$, wider than 2 in. not wider than 1 in	White Shirt Cuttings, No. 1 746 8 No. 2 White Shirt Cuttings, No. 2 146 146 Unbleached Muslins
Cash prices for Roll and Sheet Brass. For less quanties than soo Bs add 50. \$\psi\$ D. All Nos. not thinner than to No. \$\psi\$, wider than 2 in. not wider than 1 in	White Shirt Cuttings, No. 1 746 8 No. 2 White Shirt Cuttings, No. 2 146 146 Unbleached Muslins
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ilding. Turnings, Filings and Chips half thep ice of Scrap. Terms—Net cash. Interest to be adde—after thirty

above 3 in...
21, 22, 23, two cents advance on List for each mber.
24, 25, 26, four cents advance on List for each

ain, ¼ inch... ain, 3-16 inch... ain, ½ inch... 1 Mandrel Drawn Tubes « cents advance on List

rices.
Pancy Tabing to No. 2c
Pancy Tabing to No. 2c
Pancy Tabing to No. 2c
Tubingsawed or Cut 2 to 4 feet long, 2 cents advance on List
Add to cents 15 cent for each additional cutting
under 22 feet

29, special rates.

15 Per cent. 16 Per cent. 18 Per cent. 18 Per cent. 20 Per cent. STEEL.—DUTY: Bars, Ingots, 8 valued at 70 P B, or under, 24/40; above 11, 30 B B; over 11, 34/60 B Railway Bars, 1/40 B B. Railway, 10 P B. Provided, that Metal ceme from Iron by the Bessemer or pneu whatever form or description, shal American Cast Steel. For American Steel see quotations Pittsburgh.	heets and Coll over 70 and no , and ro \$ ad va Bars, in part Stee
	nted, cast or mad imatic process, o il be classed as under heading o
Best Cast. Extra Cast. Extra Cast. Round Machinery, Cast. Swaged, Cast. Best Double Shear Bilister ist quality. German Steel, Best. 2d quality. 3d quality. Sheet Cast Steel, ist quality. 2d quality.	# h 15% # h 10%
ad quality ad quality Sheet Cast Steel, 1st quality. ad quality ad quality ANTIWONY LEAD.—DOTY: Pig, 3: F 100 B O Pipe and Sheet, 246 F 3	
Pipe and Sheet, 2/10 W 3. American	
N. P. U. A. 26; B. 20; C. 16. Ti NDury: Plates, Sheets, Tagger # B; Electro-galvanized Plates, 2- tures of, not enumerated, 35 perce Block and Pigs free. Banca, sub,	and Terne, I.m. P B; Manufacent ad val. Bars, lect to duty of re-
Straits. Engilsh.	
IC 10X14 PrimeCharcoal. IC 12X22 Prime Charcoal. IX 10X14 Prime Charcoal. IX 10X14 Prime Charcoal. IX 10X17 Prime Charcoal. IX 10X17 Prime Charcoal. D U 1246X17, Prime Charcoal. For each additional X add. CORE TIN PLATE.	8.95 8.50 6.00 8.00
I C 10X14 } Bes	L Ordinary. 75 \$6-25 @ 5-90 5-90 @ 6-75
IX 14X20 7.50 IC 20X26 II.75 @ 12.00 11.25 @ 11 IX 20X28 15.50 IC 20X20 10.50	50 II 00
NO. I. SPELTERDUTY: In Pigs, Bars	
Paper Stock,	
(Dealers' Selling Prices White Shirt Cuttings. No. 1	
white Shirt Cuttings, No. 2. Mill Assorted Whites. Unbleached Muslins. City Whites, No. 1. New Canton Flannels. New Seconds, Hght. New Seconds, dark. Cotton Canvas. Linen Canvas, No. 1. Seconds, City No. 1. Seconds, City No. 2. Colors, per 100 Bs. Manila Rope, Tarred. Manila Rope. Manila Gounny Baggring, No. 1.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Commons per 100 lbs	275 275 275 275 275 275 275 275 275 275
Paints, Oils, &	cc.
Commons per 100 lbs. Binders' Board Cuttings. Paints, Oils, and Black Lamp, Coach Paints. Black Lamp, Ordinary. Black Lamp, Ordinary. Black tory Drop, fair. Black tvory Drop, fair. Black tvory Drop, best. Black Tory Drop, best. Black Paints, in oil. — kegs &c is slue Prusslan, fair to best, in oil. — kegs &c is slue Chiruses dry.	7 3 300 194 8 194 2 C
Commons per 100 lbs. Binders' Board Cuttings. Paints, Oils, Carlotte, Carl	# # # 20C # # 20C # # # 20C # # 20C # # # 20C # 20C # # 20C # # 20C # 20C # # 20C # # 20C # # 20C # 20
Commons per 100 lbs. Binders' Board Cuttings. Paints, Oils, Paints, Oils, Paints, Oils, Paints, Oils, Paints, Black Lamp, Coach Painters. Black Lamp, Ordinary. Black Lamp, Ordinary. Black Ivory Drop, fair. Black Ivory Drop, best. Black Prussian, fair to best. kega 8c; in oil. Brown, Spanish. Brown, Yan Drks. Brown, Van Drks. Brown, Van Drks. Brown, Van Drks. Brown, Paris, in oil. Brown, Con Paint, Bright Red. Bron Paint, Ground in oil, Bright Red. Bron Faint, Ground in oil, Brown, Paint, Ground in oil, Rown, Paint, Ground in oil, Furple. Brown, Paint, Ground in oil, Brown, Paint, Gro	## 3000
Commons per 100 lbs. Binders' Board Cuttings. Paints, Oils, Paints, Oils, Paints, Oils, Paints, Oils, Paints, Black Lamp, Coach Painters. Black Lamp, Ordinary. Black Lamp, Ordinary. Black Ivory Drop, fair. Black Ivory Drop, best. Black Prussian, fair to best. kega 8c; 1 Black Prussian, fair to best, in oil. Brown, Spanish. Brown, Yan Drike. Brown, Van Drike. Brown, Van Drike. Brown, Van Drike. Brown, Paris, in oil. Brown, Paris, Brown. Brown, Brown.	## 3000 ##
Commons per 100 lbs. Bindew Board Cuttings. Paints, Oils, a Paints. Black Lamp, Coach Paints. Black Lamp, Ordinary. Black Lamp, Ordinary. Black Lamp, Ordinary. Black Lamp, Ordinary. Black Index Property	# 2 200 # 2 200 # 3
Commons per 100 lbs. Binders' Board Cuttings. Paints, Oils, Carlotter Commons per 100 lbs. Paints, Oils, Carlotter Carlotte	# 2 200 # 2 200 # 3
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Frostings				4
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Glue, Sheet	******		******	2
Glaxiers Points, Zinc				
Gum Damas		*** ****		3
Cum Shelles English	******		******	******
Gum Shellac English dark		******	*******	
Litharge, English				75
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Pumice Stone, Powdered			*******	28
Pine Tar, bbis				@ 83.
Pitch				\$2.
Putty, in bladders	*******	******	******	3
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EAF	-ou an	104	80.00	G 82
G & H		******	82.80	@ \$2.0
I & K				@ 12.2
M & N			\$3.80	@ 84.1
Pinch Tar, DDIS. Putty, In bindders. Putty, In bink. Be to Common and Good- G & H. I & K. M & N. Spirits Turpentine. Whiting Spanish.				C 60 60
Whiting Spanish	******			
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Waste, No. 1 Colored				978
Waste, No. 2 Colored				614
Waste, No. 2 Colored Waste, No. 2 Colored Waste, Washed Machine				0
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Prices current per	r boat	of to fi	set.	
New list, Jan	uary I	7, 1882.		
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	100	240	344	derr.
6 x 8 to 10 x 15	\$10.00	8 9.25	\$ 9.00	
11 X 14 to 16 X 24	IL50	10.75	10.25	
18 X 22 to 20 X 30	14.75	19.92	V9. 50	11.5
15 X 36 to 24 X 35	10.50	14-75	13.00 14.00 14.50	
30 X 25 tO 24 X 30	17.50	10.00	14.00	
26 T 46 to 20 T to	30.75	17.25	14.50	
90 X 52 to 90 X 54	22.75	21.00	18.00	1
30 X 56 to 34 X 50	24.00	22.00	19.75	
30 X 50 50 30 X 44	25.25	23.75	21.50	1
36 x 60 to 40 x 60	28.50	20.00	23-75	1
Double '				
SIEES.	184.	ad.	3d.	4th.
			-	-
6 x 8 to 10 x 15	\$13.00	\$12,25	\$11.75	SIL.OC
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16 X 30 10 24 X 30			17-75	
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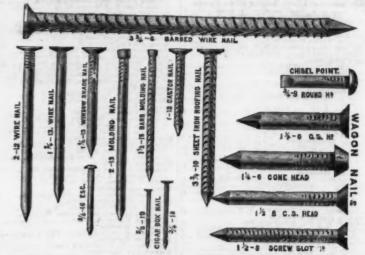
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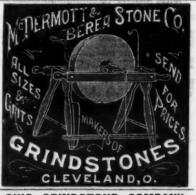
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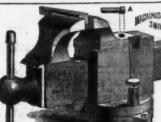
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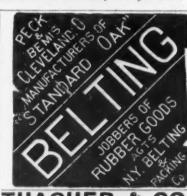
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Beecher (French, Swift & Co)	1000.
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Awis, Sewing, Common F gross \$1.70—dis 25&1 Awis, Shouldered Peg F gross \$2.45—dis 25&1 Awis, Patent Peg F gross \$2.50—dis 25&1 Awis, Shouldered Brad F gross \$2.20—dis 26&1	A.W.W.
twis, Handled Brad	o% o% net
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Balances. All Spring Balances	*
All Spring Balances dis 14210 Hells Hand, Light Brass dis 64210 Hand, Light Brass dis 64210 Hand, Extra Heavy dis 48 Hand, White Metal dis 66 Hand, Silver Chime dis 20210 Hand, Globe (Cone's Patents) dis 20210 Gong, Abbe's dis 20210 Gong, Abbe's dis 20210 Gong, Farton's dis 50210 Gong, Barton's dis 50210 Gong, Barton's dis 50210 Gong, Harton's dis 50210 Gong, Harton's dis 50210 Gong, Barton's dis 50210 Gong, Harton's dis 50210 Gong, Harton's dis 50210 Laver, Sargent's dis 50210 Laver, Taylor's Bronsed or Piatede Lever, Taylor's Japanned dis 52210 Lever, Radung dis 43210 Lever, Radung dis 50210 Cow, Western dis 50210 Cow, Western dis 50210 Cow, Western dis 50210 Cow, Mantucky, Sargent's new list dis 50210 Cow, Mantucky, Sargent's new list dis 50210 Cow, Bodge's Cenaline Kentucky, new list— Nos. e 1 1½ 2 3 4 6 6 Hog dis 50 500	AMMA
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Lever, Taylor's Bronsed or Plateds Lever, Taylor's Japanned dis 25&10 Lever, R. & E. M. Co.'s dis 45&10&25 Lever, R. & E. M. Co.'s dis 45&10&25 Lever, R. & E. M. Co.'s dis 45&10&25	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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Cow, Dodge's Genuine Kentucky, new list— Nos. e 1 1½ 2 3 4 6 Hog dis 50 \$12.00 10.00 9.00 8.00 6.00 5.00 3.50 2.50 5.00 dis 50 Cow, Texas "Star"	S B
Bellows, dis 45 Blacksmiths', Common. dis 45 Blacksmiths', Extra Pittst argh Pattern. dis 25 Molders' dis 25; Hand Bellow dis 25 Beltius, Rubber.	988
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Holts. Cast Iron Barrel, Shutter, &c	R
Bolts. Cast fron Barrel, Shufter, Sc. dis socio 5 Cast fron Chain (Sargent's list). dis 60% 10 % I vee' Pat. Door Bolts dis 50% 10 % Wrought Barrel. dis 45% 10 % Wrought Saurer. dis 45% 10 % Wrought Shutter, Bras Knob, Stanley's list dis 55% 10 % Wrought Shutter, Sargent's list dis 55% 10 % Wrought Shutter, Sargent's dis 65% 10 % Wrought Shutter, Sargent's dis 65% 10 % Wrought Shutter, Sargent's dis 65% 10 % Wrought Sunk Plush, Sargent's dis 65% 10 % Wrought Sunk Plush, Om'n, Stanley's dis 65% 10 % Wrought Su's Fisish, Stanley's dis 65% 10 % Wrought Su's Fisish, Stanley's dis 65% 10 % Wrought Su's Fisish, Om'n, Stanley's dis 65% 10 % Wro	GI PI AI
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or o	8 25 % net 50 % 10 % 10 % 10 % 10 % 10 % 10 % 10 %	We Clothes, Galvanizes — each 2509400 net Locks and Latches. Cabinet, Eagle — Changes made in list price of Cabinet, Gaylord — some numbers Jan. 1, 881, Cabinet, Bridgeport — dis 252 2 Cabinet, P. & F. Corbin — dis 252 2 Cabinet, A. E. Deitz — dis 252 2 Cabinet, C. E. Cabinet — dis 252 2 Cabinet, C. E. Cabinet — dis 252 2 Cabinet, C. E. Cabinet — dis 252 2 Cabinet, A. E. Deitz — dis 252 2 Cabinet, A. E. Deitz — dis 252 2 Cabinet, C. Cabinet — dis 252 2 Cabinet, C.
8 8 8 8 8 8 8	60 % 10 % 10 % 10 % 10 % 10 % 10 % 10 % 10 %	Branford. Norwisk. Norwich. P. & F. Corbin. Russell & Erwin. Mallory, Wheeler & Co. Whipple Mfg. Co. Trenton Lock Co. Fadlocks—Russell & Erwin. Mallory, Wheeler & Co. Wallory, Wheeler & Co. Fadlocks—Russell & Erwin. Mallory, Wheeler & Co. Salor & Go. And 2 % for cash The Mallory, Wheeler & Co. Salor & Go. J. H. McWilliams.
B 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	25 % 25 % 25 50 25 50 25 % 75 60 30 %	Mallets.—Hickorydis 10&10 %
1	25 % 50 25 50 26 20 % 20 20 20 20 20 20 20 20 20 20 20 20 20	Dixon's (P. S. & W.) Nos. 1 2 3 4 3 30.00—dis 30 5 2 4 3 30.00—dis 30 5 2 3 4 4 3 7 4 3 7 4 3 7 4 3 7 4 4 3 7 4 3 7 4 3 7 4 3 7 4 4 3 7 4
00000	so so so so so so so so so so so so so s	Penfield Block Co., Lig., Apple & Hickory
1 1119141	0% 1	blades, \$18
10	NAME OF THE PERSON OF THE PERS	Melasses Gates
1100	S E	add let to list) quare Nuts
500	BT CON D	Nut Crackers Seckley Mfg. Co
500000000	AR MANAMAN	urner & Seymour Mfg. Co
200	PAR DO	Pencils. high list, dis 50 5 aber's Carpenters'. high list, dis 50 5 aber's Bound Gift. \$ gross \$4.50, net ixon's Lead. \$ gross \$4.60, net xon's Lumber. \$ gross \$5.75, net
	PO PO	XON's Carpenters'
and the tax as as as as as	Be	ench, First Quality
9 4 4	Ba De La Pli Pli Pli Pli Pli	nch, Second Quality disa 15 folding didng (18 to 18
月发发发发光光电影电影	Hu Ga Eu Ru P.	tton's Patent. Il's Pat. Compound Lever Cutting Nippers, No. 2, in., \$20; No. 4, 7 in., \$50 \(\vec{v} \) dos. Il's Pat. Compound Lever Cutting Nippers, No. 2, in., \$20; No. 4, 7 in., \$50 \(\vec{v} \) dos. Il's Patent Co. Il's Patent Co. Il's Patent Co. Il's Patent Co. Il so \$7 to \$10 to
SEE SEESE	Sta Sta Chi Sta Sta Joh Poo Day	*Immbs and Levels. ston's
VALUE . LAVE	Eur Lee Diss E. S	ket Levels
	Hot Jap Bra Jap Jap Hay Hay Hay	House and Tackle
	Belt Bem Spri Spri Spri Bem Solid	or Drive
1	Barr B. D.	silding Door, Wrought Brass % 5 4cc dis 20 % ing Door, Iron, Painted % foot 4c. dis 10820 % in Door 100cr

April 20, 1882.	
Razer Straps. dis 60 @ 65 % Genuine Emerson. dis 60 @ 65 % dis 60 @ 65 %	Slates. Square Frames Less than a ce
Razer Straps. dis 60 @ 65 \$ Genuine Emerson. dis 60 @ 65 \$ Genuine Emerson. dis 60 @ 65 \$ Genuine Emerson. dis 30 & 65 \$ Genuine Emerson. dis 30 & 65 \$ Genuine Emerson. dis 40 & 65 \$ Genuine Emerson. dis 40 & 65 \$ Genuine Emerson. dis 40 & 65 \$ Genuine Emerson. dis 10 & 65 \$ Genuine Emerson.	Bledges an Nelson Tool W Spoke Shar Deflance Metal Iron
Sandor" dis 10 5	Bailey's (Stanle Stearns'
Rivets, 1ron and Tinned, new list, Dec. 10, 1981 dis 40% In bulk, new list, Dec. 10, 1988 dis 40 % In bulk, new list, Dec. 10, 1988 dis 40 % Copper Rivets and Burrs dis 33% % Nos. 7 & 9 Io II I2 I3 L4 I5 50 % Nos. 9 % II. 496 50c 42c 440 560 60c 60c 67 700 40 % Rivet Sets dis 40 %	Ives'No. Douglass'
Rivet Bots. Rods. Stair, Brass. Stair, Brass. Stair, Black Wainut. Stair, American Patent. dis 25 Stair, American Patent.	Riveted Table a Solid Table and
Reflers. dis 60&10&10 % Barn Door, Sargent's list. dis 60&10&10 % Acme (Anti-Friction). dis 40 %	Reed & Barton. Hall & Elton. Holmes, Booth German Silver Cast Steel, Silv. Tin (P. S. & W.) Tin (P. S. & W.) Tin (Cowles Hd Tin (Cowles Hd
Rope, Mark	Tin (P. S. & W.) Tin (P. S. & W.) Tin (Cowles Hd Tin (Cowles Hd
Mrife Met Li-t, Oct. 5, 1881, dis on soco 5 and over. Met Li-t, Oct. 5, 1881, dis on soco 5 and over. Met Li-t, Oct. 5 and over. Met Li-t, Oct. 5 and over. Met Li-t, Oct. 5 and Met Li-t, Oct.	Stocks and "Lightning" & Stone. Hindostan No. Hindostan Hac
Sisal	Sand Stone Washita Stone Washita Stone Washita Stone
Standard	Arkansas Ston Turkey Oil Stor Turkey Slips (C
From 4 to 10 m F b 34c net self-Heating F dos \$0.00 net self-Heating F dos \$0.00 net self-Heating F dos \$18.00 net self-Heatin	Grindstones, F. Stove Polis Joseph Dixon'
Stephanson Committee Commi	Gem. Gold Medal "Mirror" Ruby Rising Sun. Dixon's Plumb
Sand Paper. Bacter & Adamson's Flint, co to 116 84.75 # ream Bacter & Adamson's Flint, 2, 216 & 3. 5.21 # ream Bacter & Adamson's Flint, Assorted. 4,75 # ream Bacter & Adamson's Star 3,74 # ream	Squares. Steel
Sand Paper. Sand	Nickel Plated. Try Square and Disston's Try S Winterbottom
Sash Cord. Common. Patent. Silver Lake, Homp. P b soc net Silver Lake, Homp. P b soc, dis 10 g	Tacks, Bra List of Ap Tinned Swedes Tinned Americ Swedes Tacks, Copper Tacks, Swedes Hunga
Sash Cords. # b isc net Common. # b isc net Patent ake, Hemp # b pox, clis so \$ Silver Lake, White Coston # b pox, clis so \$ Silver Lake, Drab Coston # b pox, clis so \$ Ray# isc b pox dis so \$ Silver Lake, Drab Coston # b \$ Silver Lake, Drab Cost	Swedes Hunga Gimp and Lac Gimp and Lac Finishing Nail Trunk and Clo
Steel Ribbon. dis 10 % Sash Lacks. Clark's, No. 1, \$10.00; No. 2, \$5.00 per gross. dis 33/4 % Ferguson's dis 33/4 % Walker's net Hammond's Window Springs dis 3, 48 a 5, 5	
Ferguson Window Springs	Basket Nails Brush Tacks Leathered Car. American Cut. Cigar Box Nail Chair Nails Double-pointed
solid Eyes, in 500 b lots and over # b 1%c net	Tap Borer Common and I Ives' Tap Borer Enterprise Mfg
Sansage Staters of Affices \$\text{\$\exititt{\$\texititt{\$\text{\$\text{\$\text{\$\tex{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\texititt{\$\te	Tupes, Me American Spring
Disston's Circular dis 40 5	Tin Case
Boynton's One-Man, all lengths, new list dis 20 % Boynton's Billet Webs, 30 Inch. new list dis 25 % Boynton's Lightning Buck Saws X Bar dis 25 % Boynton's Lightning Hand, Panel and Rip dis 25 %	All Iron Nashua Lock C Wilson's Toe Calks. Winsted
Whener & Clemson Fig. Co. is than 1. Ulis 30 % W. M. & C. Mfc. Co. Cross Cuts	Tinners' T Machines (P. S. Tools (P. S. & V
Per dos	Transom I Wollensak's P Reiher's Paten Excelsior.
Enterprise 2012. Co. dis 25 Sivers. dis 25 Sivers. dis 25 Sivers. dis 26 Sivers.	Traps. Game, Newhou Game, Oneida Game, Blake's Mouse, Wood, Mouse Round
Saw Rods. Saw Rods. Saw Rots. Boynton's Patent X Cut, per doz, \$12.00; Hand Saw per doz, \$10.00. Stillman's Genuine. W dos \$3,50 and \$4,50 dis 10 \$5 \$tillman's Genuine. W dos \$3,50 and \$4,50 dis 10 \$5 \$tillman's Genuine. W dos \$3,50 dis 50 \$50 \$50 \$10 \$10 \$50 \$50 \$10 \$10 \$50 \$50 \$10 \$10 \$50 \$10 \$10 \$10 \$10 \$10 \$10 \$10 \$10 \$10 \$1	Mouse, Wood, Mouse, Round Mouse Cage, W Mouse, Catch- Rat, "Decoy" Trowels.
No. 0, \$8.00; No. 1, \$15.00, dis 15 \$ Nash* No. 1, \$8.50; No. 2, \$5.50, dis 20\$ 10 \$ Hammer, Hotekits \$5.50, dis 20\$ 10 \$ Hammer, Bemis & Call Co.'s new Patent dis 30\$ 5	Trowels, Lothrops' Brick a Disston's Brick a Disston's Brick Peace's Plaste Clement & Ma, Rose's Brick, Brades' Brick Worrall's Brick Garden
Semis & Cail Co.	Rose's Brick Brades' Brick Worrall's Brick Garden
Hart's Patent Laver dis 25 pt 195107/8 dis 26 pt 195107/8 dis 26 pt 195107/8 No. 1, \$15; No. 5, \$52, dis 35\$210 \$ Scales. Hatch, Counter, No. 171. Pt dog \$42, dis 37\$6\$210 \$	Triers. Butter and Ch. Trucks (W. Penfield Block
Morrill's	Vises. Solid Box Solid "Crown Solid, Peter W. Solid, Wilkinse
Howe's	Parallel, Parket Parallel, Wilson Parallel, Howa
Family, Turnbull's	Parallel, Sarge Parallel, Backt Parallel, Oval Parallel, Doub
Nox. Handle	Parallel, Fren Parallel, Simple "Family," List Saw Filers, Bot Saw Filers, Ste
Ship, Providence Tool Co	Solid. Wilkins Parallel, Parke Parallel, White Parallel, Merri Parallel, Merri Parallel, Sarge Parallel, Sarge Parallel, Parallel, Proni Parallel, Proni Parallel, Proni Parallel, Proni Parallel, Proni Parallel, Proni Radding. Cowell Hand Vichardson's Varasher Ci
Dission's	Washer Cr Smith's Pr Johnson's. Penny's. Appleton's.
Family, Turnouli's Scale Beams, List of January 12, 1882. dis 335&to \$ Scrapers. Adjustable Box Scraper (S. R. & L. Co.), \$6.50, dis 208105. Box, 1 Handle. \$6 dox \$6.00, dis 10 \$ Box, 2 Handle. \$6 dox \$6.00, dis 10 \$ Box, 2 Handle. \$6 dox \$6.00, dis 10 \$ Box, 2 Handle. \$6 dox \$6.00, dis 10 \$ Box, 2 Handle. \$6 dox \$6.00, dis 10 \$ Box, 2 Handle. \$6 dox \$6.00, dis 10 \$ Box, 2 Handle. \$6 dox \$6.00, dis 10 \$ Box, 2 Handle. \$6 dox \$6.00, dis 10 \$ Box, 2 Handle. \$6 dox \$6.00, dis 10 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Handle. \$6 dox \$6.00, dis 20 \$ Box, 2 Box,	Washers Well When Wire. Brass and Copp
Cowles Hdw. Co., No. 1 Extra	Wire. Brass and Copperight and Ani Bright and Ani Bright and Ani Coppered
Clark's Patent Screws. Screws.	Coppered Gaivanized, No. o Tinned, Nos. o Cast Steel Tinned Broom Annealed Fence
orass and Silver Capped dis 40 x Japanned, list of Plain Screws dis 20 x Coach, Patent Gimlet Point dis 00 x Coach, Common or Lag dis 60 5 Bed dis 10 x	Galvanized Tel Galvanized Tel Galvanized Tel Fence Staples.
Alachine, Flat Head, Iron. 418 55 %	Stubs Steel Win Japanned Barb Galvanized Bar Steel Music Wi
Hand Rail, Humason, Beckley & Co.'s. dis 45 Hand Rail, Am. Scrow Co., list of Jan. 1, '81. dis 70 Hand Rail, Am. Scrow Co., list of Jan. 1, '81. dis 70 Hand Rail, Am. Scrow Co., list of Jan. 1, '81. dis 70 Hand Rail, Am.	Judd's Picture Clothes Line W Wire Cloth, dr
R. B. Hagunin's, No. 1, \$2.10; No. 2, \$1.71; No. 3, \$1.50	Wrenches, American Adjus Baxter's Adjus Baxter's Diago
Lester, \$10.00dis 25 \$ Rogers, \$3.00dis 25 \$ Shears and Scissors	Wrenches, American Adju Baxter's Adjus Baxter's Diago Coss' Genuine. Coes' Mechan Coes' Pattern, Coss' Pattern Girard Standa Givard Agi
Fruning Sarnard's Lomp Trimmers. # dos 8,79 Lanerd's Lomp Trimmers. # dos 8,79 Lanerd's List, Dec. 788: dis 6,5 Beinsch's List, Dec. 188: dis 6,5 Beinsch's List, Dec. 188: dis 6,5 Beinsch's List, Dec. 188: dis 6,5 Beinsch's Fallor's Shears. dis 34,5 Lass, Cutlery Co. St. Trimmers. dis 75,5	Bemis & Call's
Sheaves	Bemis & Call's Bemis & Call's Bemis & Call's Van Wagoner & Aiken Pocket (The Favorite P Webster's Pate
Sheaves. Sheave	Wringers. Universal, XX, Universal, XX, Universal, XX, Universal, XX,
Siding Shutter, R. & E. list dis sociose & liding Shutter, Sargent's list dis socios & Siding Shutter, Reading list dis socios Noore's Anti-Friction (Hanging) dis 48 & Shayela and Employee.	Universal, XX, Universal, XX, Universal, XX, Universal, XX,
Shovels and Spades. Shovels and Spades. dis 15 dis 15 dis 26 to 5 dis 15 dis 26 to 5 dis 15 dis 26 to 5 dis 26 to 5 dis 26 to 5 dis 26 to 6 dis 15 dis 26 to 6 dis 26 to 6 dis 26 to 6 dis 26 dis 2	Peerless, No. 1, Peerless, No. 2, Peerless, No. 2, Peerless, No. 3,
rayne Pettebone & Son, R. R. Shovels	Wobster's Pate Wringers, XX, Universal, XX, Peerleas, No., Peerleas, No., Peerleas, No., Peerleas, No., Peerleas, No., Unique, No. o. Unique, No. o. Novelty, No. s. Novelty, No. s. Novelty, No. s. Jureka, No. s.
Folished Steel, new listdis sokroks &	Eureka, No. 2

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-	Slates. Square Frames, by case	H
		ľ
1	Deflance Metallic	5
	Stearns' dis 30210 % Spoke Trimmers.	
	Stearns'	1
	Species Spec	
I	Solid Table and Tea. .dis 55 % Britannia. .dis 60 % Reed & Barton. .dis 40 % x % x %	
	Hall & Eiton	5
	Tin (P. S. & W.), Teas. \$1.25 \(\vee \) gross, net Tin (P. S. & W.), Tables. \$2.00 \(\vee \) gross, net Tin (Cowlest Hdw. Co.)	ľ
	Tin (Cowles Hdw Co.), case lots	-
	Stone. Hindostan No. 1, be; Axe, 8e	, P
	Sand Stone. # % 6c, dis 3356% to % Washita Stone. No. 1, # % 200 net Washita Stone. No. 2, # % 166c net	-
	Washita Stone, Slips	0
	Stone- S	B
	Grindstones, Family, Loring's 450, tils 1005 b	
	Gem	TI
	Grindstones, Family, Loring's dis 10 % Stove Polish. Joseph Dixon's \$ gross \$6.00, dis 10 % Gem \$ gross \$6.00, dis 10 % Gold Medal \$ gross \$6.00, dis 25 % 'Mirror' \$ \$ gross \$6.00, dis 25 % 'Mirror' \$ \$ gross \$6.00, dis 25 % Ruby \$ gross \$6.00, dis 25 % Ruby \$ gross \$6.75, net Dixon's Plumbago \$ B &c, net Squares.	
	Squares. dis 50 %; full cases, dis 50&10 % / 2 %	V.
	Squares. dis so %; full cases, dis so&to % / 2 skink. Steel	Ma
	Tacks, Brads, &c. List of April 2, 1880.	N
	Tinned Swedes Tacks	
	Swedes Hungarian Nalis. dis 35 % High and Lace Tacks. dis 30 % High and Lace Tacks. Tinned.	ni
	Finishing Nails	
	Brush Tacks dis 25 % Eathered Carpet Tacks dis 25 % Eathered Carpet Tacks dis 20 % Eathered C	1
	Winterbottom's Try and Mitre	
	Tap Borers, Common and Ring dis 20 \$\) Enterprise Mfg. Co dis 15\$\) Enterprise Mfg. Co dis 20 \$\) Enterprise Mfg. Co dis 20 \$\)	
	Enterprise Mfg. Co. dis 25 % Tapes, Measuring.	
	Tapes, Measuring. American	:
	Tin Case	B
	Tobacce Cutters. Enterprise Mfg. Co. (Champion) Wood Bottom. # doz \$12.00, dis 408.5 \$ All Iron. # doz \$15.00, dis 408.5 \$ Nashua Lock Co.'s. # doz \$15.00, dis 408.5 \$ Wilson's. dis 38.8	
	Winsted 20 2 2 2	
	Tinners' Tools and Machines, Machines (P. S. & W.)list add 20 %	T
	Transom Litters. Wollensak's Patent. Rother's Patent, new list, Feb., 1802dis 206.106.70 5 Excelsiordis 506.108.20 Transdis 506.108.25	ar Ti
	Excelsior	fo be
	Game, Oneida Pattern. dis 552 5 Game, Blake's Patent. dis 40 5 Mouse, Wood, Choker. F doz holes, 1054	E's
	Traps dis 9,82082 \$\frac{1}{2}\$ Traps dis 3,5 Game, Newhouse dis 3,5 Game, Oneida Pattern dis 4,5 Game, Blake's Fatent dis 4,5 Nouse, Wood, Choker \$\frac{1}{2}\$ doz \$\frac{1}{2}\$ \$	
	Trowels. Lothrops' Brick and Plastering dis 25 g Reod's Brick and Plastering dis 25 g Reod's Brick and Plastering dis 25 g Reod's Brick and Plastering dis 25 g Disston's Brick and Plastering dis 20 g Peace's Plastering. dis 20 g Clement & Maynard's dis 20 g Roso's Brick dis 20 g Roso's Brick dis 20 g Worrall's Brick dis 20 g Garden dis 25 g Garden dis 55 g	
	Disston's Brick and Plastering. dis 20 5 Peace's Plastering. dis 50 5 Clement & May nard's dis 20 5	П
	Brades' Brick dis 15 5 Brades' Brick and Plastering dis 20 5 Garden dis 20 5	
	Butter and Cheesedis 25 %	A
-	Trucks (Warehouse, &c. Penfield Block Co., Reduced list March 4, 1882dis. 25 %	
	Vises. List of July 1, '79, dis 35 % Solid Box List of July 1, '79, dis 35 % Solid "Crown" (A. H. Hildick)40 to 100 B, 150 net Solid, Peter Wright's	
	Paralle , Wison's	Rti
	Parallel, Backus and Union dis 40 % Parallel, Oval Slide dis 10 dis 10 % Parallel, Double Screw Leg dis 10 % dis 10 % dis 10 % to 50 dis 10	pr up ab
	Parallel, Prentiss	pe ve
	Saw Filers, Stearn's dis 20210 5 Saw Filers, Stearn's dis 20210 5 Saw Filers, Hopkins' # dos \$17.50, dis 10 5	Mi
	Solid, Wilkinson's. 133/cc Parallel, Parker's. dis 108 Parallel, Wilson's. dis 35&10 5 Parallel, Wilson's. dis 35&10 5 Parallel, Howard's. dis 25&10 5 Parallel, Howard's. dis 25&10 7 Parallel, Horrill's. dis 15&10 7 Parallel, Sargent's. dis 55&10 7 Parallel, Sargent's. dis 55&10 7 Parallel, Oval Silde. dis 108 40 7 Parallel, Oval Silde. dis 15&10 7 Parallel, Prentias. dis 25 7 Parallel, Prentias. dis 25 7 Parallel, Simpson's Adjustable. dis 25 7 Parallel, Simpson's Adjustable. dis 25 7 Parallel, Simpson's Adjustable. dis 25% 7 Parallel, Simpson's Adjustable. dis 25% 7 Parallel, Simpson's Adjustable. dis 25% 15 Saw Filors, Secard's. dis 25% 15 Saw Filor	Fo
	Washer Cutters. ∅ dos \$1200, dis 25 ½ Johnson* ♥ dos \$1200, dis 23 ½ Penuy's. ♥ dos \$1400 and \$1600, dis 55 ½ Appleton's. ♥ dos \$100, dis 600 to \$100.	Fo Fo
	Appleton's	Fo
		Fo
	Wife. Brass and Copper, list of June 10, 1880. dis 20 g Bright and Annealed Nos. 0 @ 18, dis 90 @ 024 g Bright and Annealed Nos. 10 @ 26, dis 00 g Bright and Annealed Nos. 27 @ 26, dis 65 g Coppered Nos. 0 & 18 dis 45 @ 476 g Galvanized, Nos. 0 to 18 market list, dis 40 @ 47 g Tinned, Nos. 0 to 18 dis 40 @ 45 g Cast Steel Wife Annealed dis 45 @ 476 g Cast Steel Wife Annealed dis 45 @ 476 g Cast Steel Wife Annealed dis 45 g Cast Steel Wife Anne	Fo
	Galvanized, Nos. o to 18	Fo Fo
	Galvanized, Nos. o to 18. market list, dis 40 d 45 g Tinned, Nos. o to 18. dis 40 d 45 g Tinned, Nos. o to 18. dis 40 d 45 g Cast Steel. Tinned Broom Wire, Nos. 18 to 25. dis 55 g Annealed Fence, Nos. 8 & 9. dis 45 g 62 k 5 Annealed Grape, Nos. 10 to 14. dis 55 d 62 k 5 Galvanized Telegraph, Nos. 10 to 11. dis 50 d 62 k 5 Galvanized Telegraph, Nos. 10 to 11. dis 7 d 60 d 62 k 62 k 7 d 6	Fo
	Galvanized Telegraph, Nos. 10 to 11. 25 83/4C Galvanized Telegraph, No. 27 15 10/4C Fence Staples. 15 16 16/4C	Co
	Fence Staples, Galvanised. W 5 7 6 7 6 Stubs Steel Wire. 97.00 to £ Japanned Barb Fence. 98 840	ch
	Turner & Seymour Mrg Co., Pict tre Wire, low list	ta.
	Judd's Picture Wire dis 80% 20 & Clothes Line Wire, Galvanized 8 coil 25 @ 40c net Wire Cloth, drab and biack. \$\psi\$ of ft. 24c net	F
	Wrenches, American Adjustable	
	Baxter's Diagonal	
	Coes' Pattern, Malleable dis 75 % Coes' Pattern Wrought dis 65 % Girard Standard dis 50% to %	1
	Bemis & Call's Patent Combination dis 20 % Bemis & Call's Merrick 'sPattern dis 35 % Bemis & Call's River's Pattern	
	Bemis & Call's Brigg's Pattern. dis 25 % Bemis & Call's Cylinder or Gas Pipe dis 40 % Van Wagoner & Williams' Basin. # doz 24.50 Alken Pocket (Bright)	5
	Baxter's Diagonal Coes' Genuine. Coes' Genuine. Coes' Mechanics' Coes' Michanics' Coes' Mattern, Malleable. dis 40&1000 to 6 Coes' Pattern Mought. Coes' Pattern Wrought. dis 50&10 Girard Sanadard. dis 50&10 Girard Agi. Bemis & Call's Patent Combination. dis 50&10 Bemis & Call's Bright; Pattern. dis 50&10 Bemis & Cal	-
	Universal, XX, No. 2½ Per doz. Universal, XX, No. 2 63.00 Per doz. Universal, XX, No. 1½ 71.00 Per doz.	S
	Universal, XX, No. 1	10
	Universal, XX, No. 18	-
-	Peerless, No. 2, with Cogs. 50.00 Theoriess, No. 2, with Cogs. 63.00 Peerless, No. 2, with Cogs. 71.00	
1	Webster's Patent Combination	1

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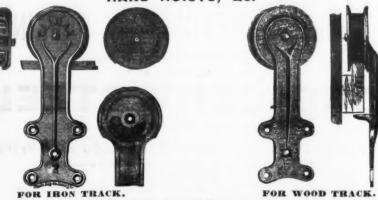
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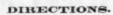
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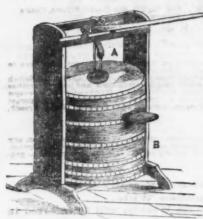
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	Spoons	5-16 and 3 4 and 3 7-32 and 3-16 and 5-32 inch.
	Parker's dis bo 5	oil Well
-	Stocks and Dies	Ordinar Round 5-16 and
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	Coes' Genuine	Above 2
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-	Coppered, o to 18	Auger at Axle Ste Frog Po
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10000	For fluctuations and discounts on eard rates see weekly Pitts-	Boiler. thick. Boiler. thick
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16 16	1½ to 4 by % to 1 inoh	Square. inch a Mill Say
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9	No. 21	90 X 56 34 X 58 96 X 60
15	1-loc per lb. extra will be charged for each gauge lighter than the lightest indicated.	11 X 14 18 X 22 15 X 36
9 9 9	to specified lengths. Barrel Hoops. 1 to 2 in., cut to length. o to 11 lbs, per set of 6 hoops. 8 lbs. and less than 9 lbs. per set of 6 hoops. 5 lbs. and less than 1bs. per set of 6 hoops. 5 lbs. and less than 1bs. per set of 6 hoops.	26 × 26
200	All Iron, including Tire	An s
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9 9	Common. Charconl. Juniata No. 15 to 17	e ur
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200	Sphee Joints for 12, 16 and 20-lb. Rail, 400 each; 2 and 30 lb. Rail. 50. each; 40 lb. bc each. 3/6 by \$6 and \(\frac{1}{2} \) Bylkos for 20 and 28-lb. Rail	8 8
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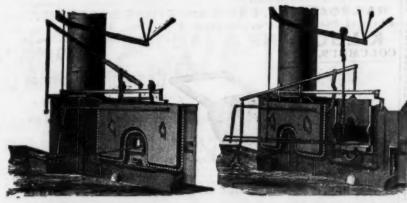
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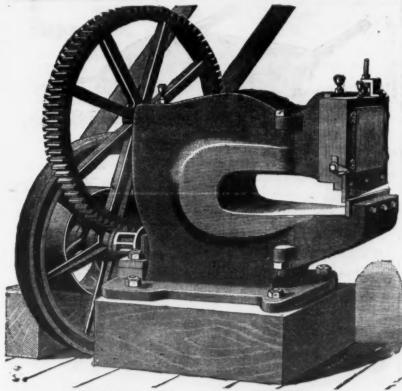


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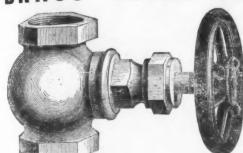
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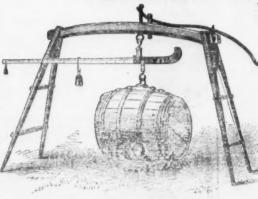
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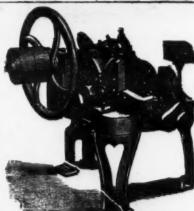
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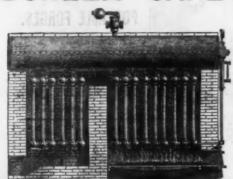
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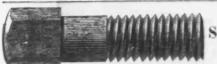
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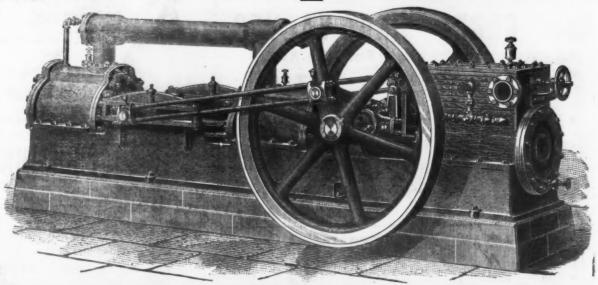
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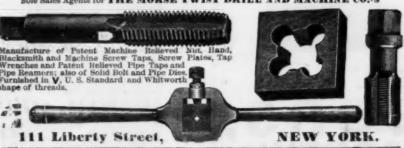
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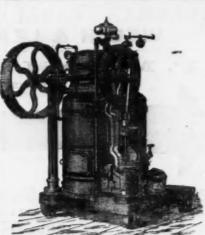


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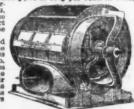


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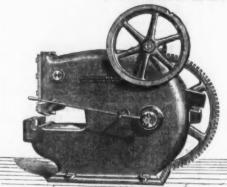
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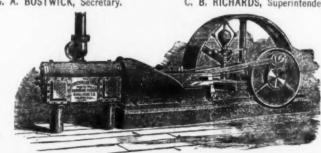
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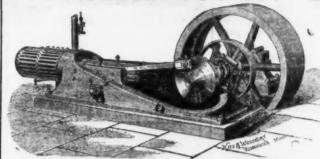
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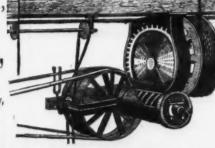
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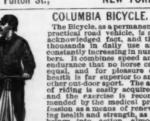


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